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ABSTRACT

This handbook is designed for use by students preparing for employment in the occupation of emergency medical technician-ambulance (EMT-A) in Iowa. Listed in the introduction are general course prerequisites, the 60 competencies taught in the course, pertinent federal and state requirements, and Iowa certification testing/retesting procedures/requirements. The following are among the topics of the course's 33 lessons: EMT-A roles and responsibilities; anatomy, physiology, and patient assessment; basic evaluation and first aid procedures for handling injuries to various body parts, poisonings, and complications of various diseases; emergency childbirth procedures; burn treatment; hazardous materials; environmental emergencies; psychological aspects of emergency care; principles of extrication; procedures for lifting and moving patients; and ambulance operations. Included in each lesson are some or all of the following: introduction, objectives, overview of lesson contents, study suggestions, terminology list, and information sheets and diagrams. Appended are 44 skills checklists, sample patient care forms used in Iowa, in-hospital clinical guidelines, Iowa EMT-A roles and responsibilities, and Iowa laws/rules pertaining to the occupation of EMT-A. (MN)

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FOREWORD

This Handbook has been developed to provide EMT-A students with an additional resource as they achieve the competencies of E.M.T.-A. The Handbook includes Department of Transportation (DOT) guides, terminology list and additional materials felt to be of assistance to the students.

ACKNOWLEDGMENTS

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INTRODUCTION

Emergency Medical Technician - Ambulance Course

Program Description

A basic training program developed by the United States Department of Transportation for Emergency Medical Technicians-Ambulance (EMT-A) which covers techniques of emergency medical care within the responsibilities of the EMT-A. The total course consists of a minimum of 126 hours which includes a minimum of 108 hours of classroom training, 18 hours of hospital and long term care facility observation and training. An additional 6 hours is required to complete the final practical and written examinations. National Registry and Iowa State certifications are obtainable. This course has been approved for 6.0 college credit hours.

Audience

Ambulance personnel or any individual who is interested in learning basic emergency medical care and meets the following prerequisites may enroll in the course.

General Prerequisites:

1. Be able to write, read, and speak English.
2. Be at least 17 years of age at the time of enrollment.
3. Be physically and emotionally capable of performing basic EMT-A skills.
4. Be certified at the CPR (Module C) level with the American Heart Association or American Red Cross prior to the completion of the course. It is best if students have CPR prior to the beginning of the course. Time constraints do not allow for obtaining the course within the EMT-A course.
5. Hold or be eligible to obtain current driver's license.
6. Students who wish to become Nationally Registered and/or certified by the Iowa State Department of Health, Emergency Medical Services Division, must meet the following requirements within one year of the course completion date:
   a. Be 18 years old.
   b. Hold a high school diploma or GED.

Entry Skills:

Math:	None
Reading:	The textbook and outside readings are at the 10th-12th grade level. Lecture and demonstration are the main methods of instruction
Writing:	Proficient basic level writing skills.

Competencies:

1. Define the role and responsibility of the EMT-A.
2. Identify and define basic body structure, function and related medical terminology.
3. Record and report patient information systematically.
4. Report suspected dependent adult and child abuse.
5. Perform basic life support according to American Heart Standards/Red Cross (Module C).
6. Assess bleeding (external and/or internal) and provide pressure, pressure points, tourniquet, splints and ice, evaluation and PASG.

7. Assess, prevent and provide basic emergency care to the shock patient.
8. Assess and provide basic emergency care to patient with open and closed soft tissue injuries (i.e., application of sterile dressings, stabilization of impaled objects).
9. Assess and provide basic emergency care to a person suspected of having open and closed fractures (i.e., application of immobilization devices).
10. Assess and provide basic emergency care to the patient with head, neck and/or spine injuries (i.e., immobilization devices).
11. Assess and provide basic emergency care to the patient with injuries of the chest, abdomen and/or genitalia.
12. Assess and provide basic emergency care to the patient with medical emergencies (i.e., heart, abdominal, neurological, respiratory, diabetes, communicable diseases, poisoning, stings and bites, substance abuse, and emotional problems).
13. Evaluate the pregnant woman and provide assistance for emergency birth.
14. Adapt assessment and provide basic emergency care to infants and children.
15. Assess and provide basic emergency care to patients with an environmental emergency (e.g., heat, cold and water).
16. Assess and provide basic emergency care to patients involved in farm accidents.
17. Provide triage in emergency situations/disasters and prioritize for transport.
18. Position, lift and move emergency patient efficiently and safely.
19. Identify the psychological aspects of emergency care (e.g., communication skills, stress, crisis intervention, disruptive patients/bystanders, sudden death, etc.).
20. Extricate, stabilize, package and transport an emergency patient.
21. Maintain and operate emergency vehicles.
22. Perform initial patient assessment and evaluation (primary and secondary survey) using diagnosis signs and symptoms (i.e., determine level of consciousness; assess airway, breathing and circulation; measure and record vitals; assess pupil reaction; and assess neurological status).
23. Demonstrate the use of mechanical aids to provide effective ventilation (i.e., airway adjuncts, oral suctioning and administration of oxygen by proper delivery systems).
24. Follow directions.
25. Participate in a discussion.
26. Utilize time effectively.
27. Prioritize series of tasks.
28. Define goals.
29. Work effectively with others.
30. Listen effectively.
31. Adapt to environment/situation.
32. Delegate duties.
33. Recognize and handle conflict.
34. Identify requirements for a job.
35. Complete required forms.
36. Write application letter.
37. Evaluate job offer.
38. Interact with others in a courteous and tactful manner.
39. Cooperate with others.
40. Accept individual differences.
41. Respect the property of others.
42. Organize thoughts and clearly express point of view.
43. Organize thoughts and write clearly.

44. Exhibit dependability.
45. Demonstrate punctuality.
46. Ask for help when needed.
47. Accept new challenges.
48. Accept supervision willingly.
49. Discuss the necessity of flexibility related to change.
50. Manage time effectively.
51. Follow rules and regulations.
52. Produce quality work.
53. Work within guidelines.
54. Take responsibility for mistakes and/or good work.
55. Comply with safety and health rules.
56. Utilize equipment correctly.
57. Maintain clean and orderly work area.
58. Demonstrate personal hygiene and cleanliness.
59. Adapt to change/demonstrate flexibility.
60. Follow policies and procedures.

Handbook Materials:
This Handbook includes the DOT student guide which is the approved course for EMT-A. In addition, there are handouts that supplement your textbook and a terminology list which should assist you in preparing for the lesson. The Appendix includes the skills checklist, which will verify your ability to perform skills, and selected rules and regulations from Iowa Department of Public Health - EMS Section.

Evaluation:
Written quizzes, unit tests and a final will be given throughout the course. Students found cheating will be expelled.

Skills:
Demonstrate proficiency in ALL practical skills in each session as determined by the instructor, coordinator, or instructor aides.

All practical skills are graded as a pass or fail. Students must pass the practical skills to be eligible for a satisfactory completion.

Physical Fitness:
Each student must exhibit strength and endurance sufficient to meet requirements in performing skills necessary to function as an EMT-A (i.e., moving, lifting, sustained CPR and extrication procedures). Physical requirements and inoculations required. Each college has their individual policies regarding these requirements.

Personal Attitude:
Each student must demonstrate conscientiousness and interest in the course. Students who fail to do so will be counseled while the course is in progress.

Personal Appearance:
Students should be neat, clean, and well groomed.

CDC Requirements:
A part of the learning experience requires clinical experience in a local hospital. There have been new OSHA regulations to protect patients and personnel from communicable disease. These requirements include processes to

prevent spread of diseases. Prior to your hospital assignment you must demonstrate safe in compliance with these standards. These include proper handwashing technique and recognition of when to glove, how to clean equipment and dispose of body waste. A copy of CDC processes, check lists and description of test can be found in the appendix.

Student Requirements for EMT-A Certification by the Iowa Department of Public Health:

1. Successful completion of EMT-A course within the past twelve months and course director approval.
2. Be 18 years old before taking State written and practical examinations.
3. Obtain a high school diploma or GED before taking State written and practical examinations.
4. Acceptable results from applicant background check.

State Certification Testing:
The State certification examinations shall be administered after the State EMS Section has received notification that the student has successfully completed the course.

1. The time limit in which the practical examination is to be completed will vary from class to class and is dependent upon the number of students, number of evaluators, availability of equipment, etc.
2. A 2-2 1/2 hour time limit shall be the maximum amount of time permitted in which to complete the written examination.

Students must successfully complete the course and pass both the written and practical certification examinations to become State certified. Certification shall be valid for a period of 1 1/2-2 years. Be sure and check your certificate for renewal.

It is the responsibility of the student to pay any necessary examination fees.

Retesting for Certification:
Those students who fail the written and/or the practical certification examination may retest once they have received notification of failure. Students will be notified of any practical station failures before leaving the examination.

If the written examination was failed, the written examination must be retaken. All retesting must occur within twelve months of course completion. Students who fail the test(s) for the third time shall be required to take the entire course before being eligible to test again.

Revised 7/92

US Department
of Transportation

**National Highway
Traffic Safety
Administration**

Emergency Medical Technician-Ambulance: National Standard Curriculum

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Student Study Guide
(Third Edition)

1984

Foreword

The National Highway Traffic Safety Administration has assumed responsibility for the development of training courses that are responsive to the standards established by the Highway Safety Act of 1966 (Amended). Since these training courses are designed to provide national guidelines for training, it is NHTSA's intention that they be of the highest quality and be maintained in a current and up-to-date status from the point of view of both technical content and instructional strategy. To this end, NHTSA supported the current study which involved revision of selected curriculum packages deemed of high value to the States in carrying out their annual work programs. This cause is one of a series of courses making up a National EMS training program for pre-hospital care. This program is a major component of total EMS system development.

The original package of the current training program was prepared in 1969 and was titled "Basic Training Program for Emergency Medical Technician-Ambulance." The training program was revised in 1977 and generally reflected the coverage and design of the original training. A Student Study Guide was developed which was not included as part of the original package. During the revision of the third edition, all three documents have been updated. The current Instructor's Lesson Plans have been updated and expanded to reflect a greater emphasis on the practical application aspects of being an EMT-A as well as to represent the current state of the art in pre-hospital emergency care at a basic life support level. The Course Guide has been updated to reflect the revised program and to be more responsive to the needs of the course coordinator. The Student Study Guide has been revised to parallel the changes in Instructor's Lesson Plans. The material which was previously contained in the DOT Patient Handling manual has likewise been incorporated into the Student Study Guide and Instructor's Lesson Plans along with instruction on the Military Anti-Shock Trousers (MAST).

Since the inception of this training course, the Department of Transportation has worked closely with many consultants to assure the quality of the medical content of this curriculum. Most notably, the American Academy of Orthopaedic Surgeons has contributed substantially to the quality of this endeavor. As early as 1964, the Academy established and conducted training courses for ambulance personnel. From these courses the original National Standard Curriculum was developed along with the Academy's reference textbook, *Emergency Care and Transportation of the Sick and Injured.*

The third edition of this text, published by the Academy in 1981, has served as the primary reference text for the medical content of this curriculum to provide a great deal of new material and to update and refine many of the older concepts.

NHTSA wishes to thank the entire membership of the National Council of State Emergency Medical Services Training Coordinators in the development and review of these materials. Specifically acknowledgement is provided to the following project staff for the National Council of State EMS Training Coordinators who coordinated this revision effort:

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Norman E. McSwain, M.D., representing the American College of Surgeons
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Introduction

This *Student Study Guide* is one of three documents prepared for the *Training Program For Emergency Medical Technicians—Ambulance (EMT-A).* It was designed as a training aid for the student. As such, it provides an overview of the objectives and content of each course lesson and includes study suggestions to aid trainees in achieving course objectives. Two other documents complete the training package: a Course Guide which contains planning and management information required by the course coordinator to administer the training program and an *Instructor's Lesson Plans* document which contains detailed outlines of course content and guidance for teaching each course lesson.

The training course covers all emergency medical techniques currently considered to be within the responsibilities of the basic EMT-A providing emergency care with an ambulance service. The course consists of 33 lessons involving 100 hours of classroom and field training plus 10 hours of in-hospital observation and training. The titles and times required for each of the 33 course lessons are given on the following page. The specified training times are minimal; actual training time (including clinical experiences) is expected to range from the recommended minimum of 110 hours to 140 hours or more depending on individual State program requirements. The purpose of the training is to *Ensure Individual Competency in Each Student* by the successful completion of each objective.

This *Student Study Guide* includes a section for each course lesson. For lessons in which new skills and knowledge are taught, the following are included:

- An introductory paragraph describing the purpose and need for the lesson.
- Objectives that students should be able to achieve upon completion of the lesson.
- An overview of lesson contents—although each overview outlines lesson contents and provides certain specific facts, the emphasis is on sign and symptom recognition and emergency care procedures.
- Study suggestions directed largely toward simulation of performance required on the job.

Course Lessons

1. **Introduction to Emergency Care Training** (3 hrs.) Overview of course objectives, scope, EMT-A roles and responsibilities, legal aspects of emergency care.

2. **Anatomy and Physiology and Patient Assessment** (3 hrs.) Overview of human systems, including anatomy, physiology and an introduction and practice in patient assessment.

3. **Airway Obstruction and Respiratory Arrest** (3 hrs.) Basic mechanics of respiration; signs of airway obstruction and respiratory arrest; maintaining an open airway; pulmonary resuscitation; variations for infants, children and laryngectomees.

4. **Cardiac Arrest** (3 hrs.) Basic mechanics of circulation; signs of cardiac arrest; cardiopulmonary resuscitation by a lone rescuer and by a team of rescuers; variations for infants and children.

5. **Manikin Practice and Certification** (4 hrs.) This lesson when combined with lessons 3 and 4 should provide the student with sufficient practice to be certified in CPR to American Heart Association Standards.

6. **Practical Use of Airway Adjuncts** (3 hrs.) Use of airways, suction equipment, oxygen equipment and delivery systems, resuscitation devices. Special considerations in CPR.

7. **Bleeding and Shock** (3 hrs.) Basic mechanics of circulation; determining blood pressure; signs of shock; preventing shock; treating shock; signs of external and internal bleeding; controlling bleeding; performing an examination for life-threatening problems; taking blood pressure; additional practice on airway care, pulmonary and cardiopulmonary resuscitation; use of mechanical aids to airway care and resuscitation.

8. Test and Evaluation — Airway Care, Pulmonary Arrest, Cardiac Arrest, Bleeding and Shock (3 hrs.) Test of knowledge taught thus far; practice on an evaluation of skills taught thus far.

9. Review of Shock and Introduction to Practical Use of Military Anti-Shock Trousers (MAST) or Pneumatic Counter Pressure Devices. (4 hrs.) This lesson provides a review of shock, indications and contraindications in the use of pneumatic counter pressure devices and provides practice in their application.

10. Soft Tissue Injuries (3 hrs.) Anatomy and physiology of the skin, signs and significance of various wound types, basic care of wounds, dressing and bandaging wounds.

11. Principles of Musculoskeletal Care and Fractures of the Upper Extremity (3 hrs.) Anatomy and physiology of the musculoskeletal system; definitions and types of fractures and dislocations; signs and symptoms of fractures, dislocations and sprains; examining a patient for injuries; techniques of immobilizing fractures and dislocations of the upper extremity.

12. Fractures of the Pelvis, Hip and Lower Extremity (3 hrs.) Signs and symptoms of fractures and dislocations of the pelvis, hip and lower extremity; immobilizing fractures and dislocations of the pelvis, hip and lower extremity; practice in examining a patient for injuries and in the use of pneumatic counter pressure devices.

13. Practical Lab: Fracture Care of the Upper and Lower Extremities (3 hrs.) Practice in the assessment and management of fractures of the upper and lower extremities.

14. Injuries of the Head, Face, Eye, Neck and Spine (3 hrs.) Anatomy and physiology of the nervous system; signs and symptoms of spine fractures; general rules of caring for patients with spine injuries; signs of a skull fracture; caring for patients suffering from injuries to the skull, brain, face, eye and neck; practice in immobilizing patients on short and long backboards.

15. Practical Lab: Patient Assessment and Spine Immobilization (3 hrs.) Practice of patient assessment techniques and in the recognition and treatment of spine injuries.

16. Injuries to the Chest, Abdomen and Genitalia (3 hrs.) Parts and functions of the abdomen, digestive system and genitourinary system; chest, abdomen, and genitalia; techniques of care; dressing and bandaging the chest; practice in performing a complete patient examination for life-threatening problems and injuries.

17. Practical Lab: Injuries I (3 hrs.) Practice in the recognition and treatment of injuries to various body parts including: performing a patient examination, use of pneumatic counter pressure devices, dressing and bandaging, spine immobilization and fracture immobilization.

18. Test and Evaluation: Injuries II (3 hrs.) Written and practical examination covering "the recognition and treatment of injuries to various body parts including: performing a patient examination, use of pneumatic counter pressure devices, dressing and bandaging, spine immobilization and fracture immobilization."

19. Medical Emergencies I (3 hrs.) Causes, signs, symptoms and techniques of care for poison victims; victims of bites and stings; heart attack patients; stroke patients; patients suffering from dyspnea. Practice in CPR and mechanical aids to resuscitation.

20. Medical Emergencies II (3 hrs.) Causes, signs, symptoms and techniques of care for diabetic patients, patients suffering from acute abdominal problems, patients with communicable diseases, poisoning, patients having seizures, pediatric patients, practice in patient assessment.

21. Emergency Childbirth (3 hrs.) Relevant anatomy, physiology, terms and emergency care equipment; delivery and care of the baby and mother during normal and abnormal births; resuscitating the newborn; care of the premature infant, practice in simulated deliveries.

22. Burns and Hazardous Materials (3 hrs.) Estimating the degree and size of a burn, caring for the burned patient; special dangers of different types of burns (heat, chemical, electrical, radiation), identification and recognition of hazardous materials situation and proper precautionary procedures.

23. Environmental Emergencies (3 hrs.) Signs, symptoms and techniques of care for the patient suffering from heat cramps, heat exhaustion, heat stroke, hypothermia and frostbite; signs, symptoms and techniques of care for the patient exposed to water related emergencies.

24. Psychological Aspects of Emergency Care (3 hrs.) Considerations when dealing with special patients: infants, children, elderly, handicapped, psychologically disturbed; patients displaying abnormal behavior, substance abuse patients, dealing with death and dying and emotional aspects of providing care as an EMT-A.

25. Lifting and Moving Patients (3 hrs.) Techniques of lifting and moving patients; immobilizing patients with suspected spine injuries on short and long backboards; loading and unloading stretchers, review of triage.

26. Principles of Extrication (3 hrs.) Principles and considerations involved in gaining access to and extricating persons from inaccessible situations, packaging and removing patients with suspected spine and other injuries; removing patients from beneath vehicles.

27. Practical Lab: Extrication (3-8 hrs.) Practice in patient assessment, treatment and removal of patients from motor vehicles and other inaccessible situations.

28. Test and Evaluation — Medical Emergencies, Emergency Childbirth, Environmental Emergencies, Lifting and Moving (3 hrs.) Test of knowledge and skills of medical emergencies, emergency childbirth, environmental emergencies, psychological aspects, and lifting and moving patients; extrication.

29. Ambulance Operations I (3 hrs.) Overview of regulations and recommendations pertaining to driving an emergency vehicle, provide an understanding of all records and reporting systems and forms utilized by the EMT-A and promote efficient and proper use of all radio communications equipment and systems the EMT-A will utilize.

30. Ambulance Operations II (3 hrs.) Provide an overview of such aspects of EMT responsibilities as: vehicle and equipment maintenance, emergency department procedures, scene control, special scene situations (crime, death, etc.), disaster planning and other non-medical functions during a typical ambulance run.

31. Situational Review (3 hrs.) Review of course contents by group discussion of situational examples.

32. Final Written Test (2 hrs.) Test of knowledge learned.

33. Final Practical Evaluation of Skills (3 hrs.) Evaluation of skills learned in the emergency care course.

Lesson 1
Introduction to Emergency Care Training

Introduction

The EMT typically represents one of the first components of the emergency medical care system. With proper training, he will be able to provide basic life support to victims of emergencies as well as minimize discomfort and further injury. This course has been designed to provide that training. This introductory lesson provides an overview of the EMT-A training course, EMT-A roles and responsibilities on legal problems relative to emergency care.

Objectives

At the conclusion of Lesson #1, the instructor will have provided sufficient information, demonstration, and practice to the student to ensure his/her ability to:

—Describe in their own words the goal of the EMT-A National Standard Curriculum.
—List 4 contributing agencies in your local EMT-A system.
—Describe the mechanism for accessing your local EMS system.
—List 6 roles and responsibilities of the EMT-A.
—List 6 areas of personal attitude and conduct expected of an EMT-A.
—List 3 medico-legal aspects of emergency medical care.
—Describe State requirements for EMT-A certification and recertification.

Overview of Lesson Contents

Course Overview

The course emphasizes emergency medical care skills and attempts to teach these skills in a job-related context. The following *Medical Conditions* are included: inadequate airway, cardiac arrest, external and internal bleeding, shock, injuries to all body parts, fractures, dislocations, sprains, poisons, heart attack, stroke, diabetes, acute abdomen, communicable diseases, patient with abnormal behavior, alcohol and drug abuse, the unconscious state, emergency childbirth, burns (chemical, electrical heat and radiation), emergencies caused by hot and cold environmental conditions and emergencies resulting from water hazards. In addition, the program includes training in the use of the following *Equipment and Materials:* suctioning devices, airways, bag-mask resuscitation devices, oxygen equipment and delivery systems, sphygmomanometer and stethoscope, splints of all types (including backboards), and bandages.

Lesson 1 introduces the student to the course and to the emergency medical technician's role and responsibilities. Three lesson blocks or modules comprise the bulk of the course:

—Lessons 2–8 on patient assessment and basic life support.
—Lessons 9–18 on injuries to various body parts.
—Lessons 19–28 on common medical emergencies, emergency childbirth, environmental emergencies, techniques of lifting and moving patients, extrication, and field practice in "packaging" individuals with suspected spinal and other injuries.

Each of these lesson blocks has its own practice, test, and evaluation sessions. The operational aspects of the EMT's job is covered in Lessons 29 and 30. A review of field situations that could be encountered by the EMT is presented in Lesson 31. The course concludes with a written test of knowledge (Lesson 32) and a practical evaluation of skills (Lesson 33). The course provides for an early and continuing emphasis on patient assessment as well as reinforcement of the basic sequence of emergency care procedures.

Role and Responsibilities of the EMT.

Careful examination of the patient for signs and symptoms of illness/injuries.
Prompt and efficient care of the patient.
Careful handling of the patient.
Safe and efficient transport of the patient.
Orderly transfer of the patient to the hospital.

Additional responsibilities include:

Use basic tools and procedures to gain access to and disentangle the patient from the vehicle.

Control the accident scene, including parking his vehicle in such a way as to minimize further danger in the roadway as well as controlling the actions of bystanders.

- Communications.
- Reporting and recordkeeping.
- Vehicle driving, maintenance and care.

The EMT-A will need to learn a good deal about the area in which he provides services.

Personal Attitudes and Conduct of the EMT.

- Professional manner.
- Appearance.
- General conduct.

Legal Problems Relative to Emergency Care.

Duty to act.

Standard of care including:

- The type of individual and community conduct.
- Standards imposed by force of law and
- Professional or institutional standards.

Consent, including:

- Actual consent.
- Implied consent.
- Minor's consent and
- Consent of the mentally ill

Immunities including:

- Government immunities.
- Good samaritan laws.
- EMT and paramedic statutes.
- Exemption from medical practices act and
- Effects of licensure and certification.

Overview of Requirements for Training, Certification and Recertification.

- Training.
- Certification.
- Recertification.
- Other requirements as indicated.

Study Suggestions

1. List the 5 main roles and responsibilities of an EMT-A.
2. List three reasons why you wish to become an EMT-A.

Terminology List for Lesson 1

At the completion of this lesson, you should be able to define and use the following terms correctly.

EMS System

Duty to Act

Standard of Care

Actual Consent

Implied Consent

Good Samaritan Law

Lesson 1

Functions of the Emergency Medical Technician (EMT)

1. Prompt and efficient care of the patient before transport, e.g.:
   - . Upon notification, plan and prepare for care.
   - . Notify necessary personnel.
   - . Anticipate equipment needs
   - . Analyze total situation
   - . Recognize and evaluate problems
   - . Attend to life threatening emergencies first
   - . Provide for safety and protection of patient
   - . Care for all injuries
   - . Provide care when extricating/moving patient
   - . Continue care when extrication is delayed
   - . Avoid undue haste and mishandling
   - . Search for medical identification emblems

2. Control of the accident scene, e.g.:
   - . Anticipate enroute possible hazards by the location and type of emergency
   - . Exercise precaution in parking ambulance
   - . Remove patient from situations threatening lives of patient or rescuer
   - . Avoid assuming functions of police or other authorities when present BUT do not permit their actions to compromise care of the patient
   - . If alone, control bystanders and manage relatives
   - . Assume subordinate but cooperative role if physician is present

3. Extrication (light) and preparation of patient for transport, e.g.:
   - . Do not engage in extrication or rescue procedures when qualified rescue personnel are present
   - . Correct life threatening problems and immobilize injured parts before extricating
   - . Extricate patient in such a way as to minimize damage to injured parts
   - . Continue to administer essential care during extrication
   - . Ensure optimal preparation before decision to transport
   - . Prevent disturbance and exhaustion before transport
   - . Protect patient's valuables
   - . Respond to patient's need for religious comfort in the face of death
   - . Handle deceased in accordance with local ordinances and procedures

4. Safe and efficient transport and continuing care of the patient on the way to the hospital, e.g.:
   - . Ride in compartment with patient
   - . Continually observe and protect patient
   - . Administer care as indicated or instructed
   - . Report changes in patient's condition

     OR
   - . Drive in such a manner as to minimize disturbance to affected parts, maximize comfort, prevent shock, allow freedom of breathing and avoid further damage to the patient
   - . Know and abide by laws and traffic regulations pertaining to ambulances
   - . Exercise emergency privileges properly
   - . Make proper use of lights and sirens

5. Orderly transfer of patient and patient information to hospital emergency department, e.g.:
   - Communicate vital information regarding patient to emergency department while enroute and upon arrival
   - Deliver patient to emergency department
   - Alert emergency department regarding high priority patients
   - Assist emergency department as needed or as requested
   - Maintain a courteous and understanding attitude to emergency department personnel
   - Follow prescribed procedures for returning or exchanging equipment or supplies
   - Comply with hospital regulations
   - Depart from emergency department when assistance is no longer required

6. Communications, e.g.:
   - Dispatch and control movement of ambulances (performed by dispatcher)
   - Request supplementary resources, i.e., medical rescue, police or fire.
   - Advise emergency care personnel on care of patients at scene and during transport (performed by emergency room personnel or dispatcher)
   - Alert emergency room personnel of expected arrival and condition of patient
   - Distribute patients to appropriate medical facilities
   - Coordinate as necessary and/or as required with police, fire departments and other emergency resources
   - Follow FCC regulations regarding communication equipment

7. Reporting and record keeping, e.g.:
   - Maintain a log of ambulance calls including locations, time of dispatch, arrival at and departure from scene and delivery to emergency department; other items as required
   - Interrogate patient, relatives, or bystanders; observe circumstances; collect suicide notes, etc., in order to be able to provide the following types of information:
     - Medical: identification of patient; type of accident or nature of illness; rescue measures preceding emergency care; care given at scene and during transport; changes in vital signs; accidents during transport
     - Legal: circumstances in suicide, homicide, or rape; animal bites; dying statements; statements of patient or others that may serve as testimony.
     - Health: identification and circumstances required by coroner or medical examiner in case of death at scene or during transport; animal bites; radiation, chemical or gas hazards

8. Care of vehicle and equipment, e.g.:
   - Maintain the vehicle and all medical, safety, and communication equipment in a state of operational readiness
   - Replenish supplies
   - Sanitize and decontaminate vehicle and equipment routinely and after exposure to communicable diseases

9. Summary of functions
   - Patient examination
   - Prompt and efficient care
   - Appropriate patient handling
   - Safe and efficient patient transport
   - Orderly transport of patient to emergency department
   - Communications
   - Reporting and record keeping
   - Vehicle driving, maintenance and care
   - IF RESCUE CREWS ARE ABSENT, gain access to and disentangle patient
   - IF POLICE ARE ABSENT, control the accident scene

10. Professional conduct
   - Controls emotions, is courteous, uses proper tone of voice, is confident, uses appropriate conversation, does not smoke while working with patient
   - Is well groomed, clean, wears proper uniform, insignia
   - Shows interest in job, reflects concern for patient, prevents embarrassment for patient, provides reassurance for patient
   - Stays calm

*Additional Resources: See Appendix Iowa Department of Public Health, Roles and Responsibility of EMS Provider for additional information on legal aspects and roles and responsibilities.

THE EMT CODE OF ETHICS

Professional status as an Emergency Medical Technician and Emergency Medical Technician-Paramedic is maintained and enriched by the willingness of the individual practitioner to accept and fulfill obligations to society, other medical professionals, and the profession of Emergency Medical Technician. As an Emergency Medical Technician at the basic level or an Emergency Medical Technician-Paramedic, I solemly pledge myself to the following code of professional ethics:

A fundamental responsibility of the Emergency Medical Technician is to conserve life, to alleviate suffering, to promote health, to do no harm, and to encourage the quality and equal availability of emergency medical care.

The Emergency Medical Technician provides services based on human need, with respect for human dignity, unrestricted by consideration of nationality, race, creed, color, or status.

The Emergency Medical Technician does not use professional knowledge and skills in any enterprise detrimental to the public well being.

The Emergency Medical Technician respects and holds in confidence all information of a confidential nature obtained in the course of professional work unless required by law to divulge such information.

The Emergency Medical Technician, as a citizen, understands and upholds the law and performs the duties of citizenship; as a professional, the Emergency Medical Technician has the never-ending responsibility to work with concerned citizens and other health care professionals in promoting a high standard of emergency medical care to all people.

The Emergency Medical Technician shall maintain professional competence and demonstrate concern for the competence of other members of the Emergency Medical Services health care team.

An Emergency Medical Technician assumes responsibility in defining and upholding standards of professional practice and education.

The Emergency Medical Technician assumes responsibility for individual professional actions and judgment, both in dependent and independent emergency functions, and knows and upholds the laws which affect the practice of the Emergency Medical Technician.

An Emergency Medical Technician has the responsibility to be aware of and participate in, matters of legislation affecting the Emergency Medical Technician and the Emergency Medical Services System.

The Emergency Medical Technician adheres to standards of personal ethics which reflect credit upon the profession.

Emergency Medical Technicians, or groups of Emergency Medical Technicians, who advertise professional services, do so in conformity with the dignity of the profession.

The Emergency Medical Technician has an obligation to protect the public by not delegating to a person, less qualified, any service which requires the professional competence of an Emergency Medical Technician.

The Emergency Medical Technician will work harmoniously with, and sustain confidence in Emergency Medical Technician associates, the nurse, the physician, and other members of the emergency medical services health care team.

The Emergency Medical Technician refuses to participate in unethical procedures, and assumes the responsibility to expose incompetence or unethical conduct of others to the appropriate authority in a proper and professional manner.

Lesson 2
Anatomy, Physiology and Patient Assessment

Introduction

Patient assessment is an integral part of the skills an EMT-A needs to provide prompt and efficient patient care. In order to conduct a patient examination the EMT-A must have a thorough understanding of anatomy, physiology, medical terminology and vital signs. These topics are only introduced in this lesson and will be reinforced throughout the course.

Objectives

At the conclusion of Lesson #2, the instructors will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Define the following topographic anatomical terms:

- medial
- lateral
- proximal
- distal
- superior
- inferior
- anterior
- posterior
- midline
- right
- left

—Describe the general functions of the following major body systems:

- respiratory
- circulatory
- muscular
- skeletal
- nervous
- digestive
- genitourinary
- reproductive

- List the 4 patient vital signs.
- List 5 diagnostic signs in addition to the vital signs.
- Demonstrate on a programmed patient the technique for completing a total patient assessment and identify and record diagnostic signs and their normal states.
- Record and communicate in proper sequence, their patient assessment information.
- State the difference between a sign and symptom.

Overview of Lesson Contents

Overview of Anatomy and Physiology.

Skeletal system and body cavities. The skeletal system consists of the bones that form the support framework of the body; they also protect body organs.

Skull.
Spinal column.
Thoracic (rib) cage.
Abdominal cavity.
Pelvic cavity.
Upper extremeties.
Lower extremities.

Muscular system. The muscular system consists of the tissue that contracts and relaxes to permit body movement or functions.

Voluntary muscles.
Involuntary muscles.
Cardiac muscle.

Nervous system. The nervous system consists of the brain, spinal cord and nerves that control and permit all body activities and sensations. A muscle will not move if the nerves which serve it are cut.

Respiratory system. The respiratory system consists of the organs of the body which enable breathing. It provides for the intake of oxygen needed by the body and the release of carbon dioxide and other substances. Main elements are:

a. Nose and mouth
b. Pharynx
c. Larynx
d. Trachea
e. Bronchi
f. Lungs

Circulatory system. The circulatory system consists of the heart (a pump) and a system of arteries which transport blood containing oxygen to all body systems, capillaries through whose thin walls oxygen and other products are exchanged with body cells, and veins which transport blood containing waste products from body cells to be eliminated.

Digestive system. The digestive system consists of the organs which enable us to eat, digest, and eliminate foods, including:

a. Mouth and throat
b. Esophagus
c. Stomach
d. Liver
e. Gallbladder
f. Pancreas
g. Intestines
h. Rectum

Genitourinary system. The genitourinary system consists of the organs which enable us to eliminate certain waste materials filtered from the blood and to reproduce, including:

a. Kidneys
b. Ureter
c. Urethra
d. Bladder
e. Male and female reproductive organs.

Topographic Anatomy

Right
Left
Anterior
Posterior
Midline
Proximal
Distal
Superior
Inferior

Diagnostic Signs

A **Sign** is something the rescuer sees, hears or feels; for example a pale face, no respirations, cold skin.

A **Symptom** is something the patient tells about himself, that is, he feels nauseous, his back hurts, he has no sensation in the extremities.

Use in Diagnosis.

Overview of Signs. A brief overview of the important diagnostic signs is given below:

Pulse

The pulse can be:

Absent
Slow or fast
Weak or pounding
Irregular

Respirations

Respirations can be:

- Absent
- Slow or fast
- Shallow or deep
- Gasping, labored, or choking

Blood Pressure

Systolic—contraction of heart
Diastolic—relaxation of heart

Blood pressure

- Can be high
- Can be low
- Can fall rapidly

Temperature

Normal body temperature is 98.6 degrees.

The skin can be:

- Cold or hot

- Wet, clammy or dry

Skin Color

Skin color can be:

- White, pale or ashen
- Red or flushed
- Blue (for people with dark pigmentation, blue may be noted around the fingernails, palms of hands, and mouth)

Pupils of the Eyes

The pupils can be:

- Dilated
- Constricted
- Unequal
- Fixed

Level of Consciousness

A person's level of consciousness may range from normal to mildly confused, disoriented, or unconscious.

Inability to Move On Command—an indicator of paralysis.

A person may not be able to move his legs, both his arms and his legs, or one side of his body.

Reaction To Pain—an indicator of paralysis.

A person may have no sensation or a numb feeling in arms and/or legs or certain parts of the body.

Medical Identification Symbols

People with special medical problems (for example, diabetes, epilepsy, acute allergic reactions) frequently wear a medical identification symbol on which the nature of the problem is indicated.

Patient Survey

Stages. At the emergency scene, patient examination must be performed. It is performed in two stages:

Checking for and controlling life-threatening problems—the primary survey.

Checking for the stabilizing injuries not threatening to life.

Level of Consciousness

Respirations

Pulse

Bleeding/Shock

Secondary Survey. In the secondary survey, the EMT makes a head-to-toe examination of the patient.

The EMT should always observe the accident scene and check witnesses to attempt to determine any mechanism of injury.

Head

Observe for confusion, unresponsiveness, unconsciousness.

Check pupils.

Observe for lacerations and contusions about the face and scalp.

Feel gently for depressions in the skull.

Check ears and nose for fluid intake.

Check mouth for foreign objects, bleeding.

Neck

Observe for cuts, bruises, deformities.

Feel for areas of tenderness, deformities.

Chest

Check for bruises, pain, deformities.

Check that both sides of the chest expand normally upon inspiration.

Back and Buttocks

Check for cuts, bruises, pain, deformities.

Abdomen and Pelvis

Check abdomen for tenderness, rigidity.

Compress pelvis gently.

Upper Extremities

Check for cuts, bruises, pain, deformities, unusual positions.

Check for sensation.

Ask patient if he can move arms.

Lower Extremities

Check for cuts, bruises, pain, deformities, unusual positions.

Check for sensation.

Ask patient if he can move his legs.

Medical Alert Symbols

Check for tags, bracelets, etc.

Interview

Obtain pertinent medical history.

Note mechanism of injury.

Information on current medical problems.

Vital Signs

Obtain and record

May occur elsewhere during the exam dependent upon patient's condition.

Repeat and record at regular intervals.

Study Suggestions

1. Describe what you expect to be able to do as a result of successfully completing the course.
2. There is a big gash in the patient's arm and it is bleeding severely. The patient refused treatment even though he appears weak and about to faint. Explain what you would do and why.
3. Identify the body system to which each of the following belongs and explain the function of each system: heart, stomach, uterus, lung, skull, biceps, muscle, spinal cord.
4. Is a flushed face a sign or a symptom? Why?
5. Describe the position of the thumb relative to the wrist.
6. Describe the position of the heart relative to the stomach.
7. Describe the position of the chest relative to the back.
8. The accident victim has no visible wounds and says he is feeling all right. Describe the signs you would check and what you would expect to find if the patient's condition is normal.

Terminology List for Lesson 2

At the completion of this lesson, you should be able to define and use these following terms correctly.

Anatomical terms

- Anterior or ventral
- Caudal
- Cranial
- Distal
- Inferior
- Lateral
- Medial
- Midline
- Posterior or dorsal
- Proximal
- Superior

Body Cavities (locate and list organs contained in the cavity)

- Abdominal cavity
- Cranial cavity
- Pelvic cavity
- Spinal cavity
- Thoracic cavity

Emergency terminology

- Acute
- Assessment
- Chronic
- Communicable
- Diagnosis
- Disease
- Signs
- Symptoms
- Treatment

Other words for unit

- Involuntary
- Voluntary

Lesson 2

Medical Terminology Not Related Directly to Body Structure and Function

Combining forms are often used in medical terminology with words. Look up combining forms and write definition in space.

Form	Word
a or an	(anoxia)
ab	(abduct)
anti	(antivenin)
bi	(bilateral)
brachi	(brachiocephalic)
brady	(bradycardia)
capit	(decapitation)
caps	(capsule)
cardi-cardio	(cardiac)
cephal	(encephalitis)
cost-costa	(intercostal)
crani	(cranium)
cyan	(cyanotic)
cyt, cyto, cyte	(erythrocyte)
derm	(epidermis)

Form	Word
dia	(diaphragm)
dis	(dislocation)
dors	(ventrodorsal)
dys	(dyspnea)
emia	(glycemia)
encephal	(encephalitis)
epi	(epigastric)
fract	(fracture)
gastr, gastro	(gastritis)
glyc	(hyperglycemia)
gram	(cardiogram)
gyn	(gynecology)
hem, hemo, hemat	(hematuria)
hemi	(hemiplegic)
hepat	(hepatitis)
hydr, hydro	(dehydration)
hyper	(hyperactive)
hypo	(hypotension)

Form	Word
idi	(idiosyncrasy)
inter	(intercostal)
itis	(appendicitis)
later	(ventrolateral)
leuk	(leukocyte)
lig	(ligament)
mal	(malfunction)
myo	(myocardium)
nephr	(nephritis)
ophthalm	(ophthalmoscope)
ost	(osteitis)
oto	(otitis)
path	(pathology)
pleur	(pleurisy)
pnea	(dyspnea)
post	(postpartum)
pulmo	(pulmonary)
retro	(retroperitoneal)

Form	Word
rhin	(rhinitis)
rrhage	(hemorrhage)
rrhea	(diarrhea)
semi	(semicoma)
sub	(subclavian)
tachy	(tachycardia)
therm	(diathermy)
trache	(tracheotomy)
uni	(unilateral)
viscer	(evisceration)

Lesson 2

Terminology continues

Terms for initial/secondary exam

Abdomen terms

- Distention
- Rebound
- Rigidity
- Tenderness

Blood pressure terms

- Diastolic
- Hypertension
- Hypotension
- Palpation
- Systolic

Comatose

Crepitus

Cyanosis

Pulse terms

- Apical
- Bounding
- Bradycardia
- Irregular
- Tachycardia
- Thready

Pupil terms

- Constricted
- Dilated
- Non-reactive
- Reactive

Respiration terms

- Apnea
- Cheyne-Stokes breathing
- Dyspnea
- Hyperventilation
- Labored
- Shallow
- Tachypnea

Sign

Symptom

Triage

Lesson 2

Summary of Body Systems

Body System	Body Structure and/or Major Organs	Basic Normal Functions
Skeletal	Cavities (skull, spinal, abdominal, thoracic) 200+ bones	1. Protects organs 2. Shapes - supports body 3. Moves body 4. Stores minerals 5. Helps form blood
Muscular	Voluntary (skeletal) Involuntary (smooth) muscles Cardiac (heart)	1. Movement 2. Helps with posture 3. Produces heat
Respiratory	Nose, throat (larynx), trachea (windpipe), bronchi, lungs	1. Takes in air, separates oxygen for body use 2. Removes and gets rid of carbon dioxide
Circulatory	Heart, arteries, veins, capillaries, lymphatic vessels (blood is material transported)	1. Moves blood through body to all cells to provide oxygen and nourishment 2. Carries waste from cells to be removed from body
Digestive	Mouth, teeth, esophagus, stomach, small and large intestines, liver, gallbladder, pancreas, various glands	1. Mechanically and chemically prepares food for use by cells--via absorption in bloodstream 2. Removes waste from digestion
Genitourinary	Kidneys, bladder, ureters, urethra, testes, scrotum, penis, vagina	1. Reproduces humans 2. Removes waste products by filtering them out of the blood
Nervous	Brain, spinal cord, nerve (neuron-basic nerve cell)	1. Communication throughout body 2. Controls and coordinates all body activity (voluntary and involuntary)
Endocrine	Glands - thyroid, pancreas, adrenal, etc.	1. Makes hormones which help regulate organ activity.

Lesson 2

Patient Assessment
Sample Priorities in the Physical Examination

Trauma patients

Primary Survey
A. Unconsciousness?
B. Airway
C. Immobilize head/neck
D. Breathing - O_2 if needed
E. Circulation - carotid best
F. Hemorrhage and treat
G. Inspect chest trauma and treat
H. Medical I.D. tags

Secondary Survey
A. Vitals
B. Prepare for transport
C. Notify medical control
D. Apply cardiac monitor
E. Neuro exam
F. Check head - bruises, bumps, blood
G. Check eyes - movement, pupillary signs, conjugate gaze, coon's eyes
H. Check nose - blood, CSF alignment, obstruction
I. Check mouth - bloody foreign materials, cyanosis of lips, teeth missing, teeth alignment
J. Check ears - blood, CSF, battle signs
K. Check neck - tracheal deviation, jugular vein distention, c. spine, tracheal tugging. C. collar on
L. Check clavicles - broken bones
M. Check chest - bruises, symmetry, flail, breath sounds - bilaterally
N. Check heart rate and regularity
O. Check abdomen - bruises, masses, bowel sounds, distention, pain
P. Check hips and pelvis - fx, crepitus, pain
Q. Check extremities - deformity, bruises, equality of pulses, strength and sensation
R. Check back - spinal injury, blood
S. Skin temperature, moisture, color

Medical Patients

Primary Survey
A. Unconsciousness?
B. Airway
C. Breathing - O_2 if needed
D. Circulation and treat
E. Hemorrhage and treat
F. Medical I.D. tags

Secondary Survey
A. Vitals
B. Prepare for transport
C. Notify medical control
D. Apply cardiac monitor
E. Neuro exam
F. Check head - cyanosis, color
G. Check eyes - pupillary signs
H. Check nose - obstruction
I. Check mouth - obstruction, cyanosis, foreign objects
J. Check neck - jugular vein, distentention tracheal alignment, tracheal tugging
K. Check chest - lung sounds, equal chest expansion, signs of trouble breathing, use of abdominal muscle to breathe
L. Check heart rate and regularity
M. Check abdomen distention, use of muscles to breathe, pulsating masses
N. Check extremities - swelling, pulses, sensation, color
O. Skin temperature, moisture and color

Trauma Score*

The Trauma Score is a numerical grading system for estimating the severity of injury.[1] The score is composed of the Glasgow Coma Scale (reduced to approximately one third total value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 1, and the highest score is 16.

Respiratory Rate	10-24/min	4
	24-35/min	3
	36/min or greater	2
	1-9/min	1
	None	0
Respiratory Expansion	Normal	1
	Retractive	0
Systolic Blood Pressure	90 mm Hg or greater	4
	70-89 mm Hg	3
	50-69 mm Hg	2
	0-49 mm Hg	1
	No Pulse	0
Capillary Refill	Normal	2
	Delayed	1
	None	0

Glasgow Coma Scale

Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Verbal Response	Oriented	5
	Confused	4
	Inappropriate Words	3
	Incomprehensible Words	2
	None	1
Motor Response	Obeys Command	6
	Localizes Pain	5
	Withdraw (pain)	4
	Flexion (pain)	3
	Extension (pain)	2
	None	1

Total Glasgow Coma Scale Points

14-15 = 5
11-13 = 4
8-10 = 3
5- 7 = 2
3- 4 = 1

Total Trauma Score	1-16

---

*Endorsed by the American Trauma Society

Lesson 2

MEASUREMENT OF BLOOD PRESSURE

B The Bell of the stethoscope must not come in contact with clothing or the cuff.

L Loose application of the cuff will exert extra pressure on tissues, causing a falsely high reading.

O One inch is the proper space to leave between the brachial artery and the lower edge of the cuff.

O Occasional high blood pressure readings are of less concern than persistent readings of 140/90 or higher.

D Cuff Diameter is important; a cuff that is too narrow will cause a falsely high reading.

P The cuff is inflated 30 millimeters above the point where the Pulse disappears.

R The compression of the cuff should be Released so that the mercury falls at a rate of two millimeters per heart beat.

E The mercury column should be read at Eye level; looking down will cause a falsely high reading.

S Stress will cause a falsely high reading.

S The mercury Shygmomanometer is generally regarded to be more accurate.

U Under-inflation of the cuff will cause a falsely low systolic reading.

R The patient should Rest in a comfortable position for at least five minutes before the reading is taken.

E The Extremity on which the pressure is measured must be at heart level, regardless of position.

Reprinted from Kidney Foundation of Iowa, Inc., Linda Pedersen, B.S.N., R.N., Coordinator of "Down With High Blood Pressure" Program

Lesson 2

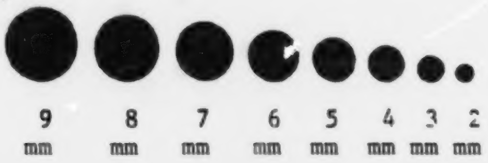
GLASGOW COMA SCALE

The Glasgow Coma Scale, which is based upon eye opening, verbal and motor responses, is a practical means of monitoring changes in level of consciousness. If each response on the scale is given a number (high for normal and low for impaired responses), the responsiveness of the patient can be expressed by summation of the figures. The lowest score is 3; the highest is 15.

EYES	Open	Spontaneously	4
		To verbal command	3
		To pain	2
	No response		1
BEST MOTOR RESPONSE	To verbal command	Obeys	6
	To painful stimulus*	Localizes pain	5
		Flexion-withdrawal	4
		Flexion-abnormal (Decorticate rigidity)	3
		Extension (Decerebrate rigidity)	2
		No response	1
BEST VERBAL RESPONSE**		Oriented and converses	5
		Disoriented and converses	4
		Inappropriate words	3
		Incomprehensible sounds	2
		No response	1
TOTAL			3-15

* Apply knuckle to sternum, observe arms
**Arouse patient with painful stimulus if necessary

Pupil Key:



Important Facts

1. What is Medic Alert? Medic Alert is a nonprofit foundation dedicated to saving lives in accidents and medical emergencies. Founded in 1956 by a physician, Medic Alert is the most comprehensive emergency medical identification system in the world.

2. Who needs Medic Alert? One in four Americans has a medical condition that places them at added risk in an emergency. Of more than 200 common conditions, hypertension, heart trouble, severe allergies, diabetes, asthma and epilepsy are among the most common.

3. Do Physicians support Medic Alert? Over 95% of physicians acquainted with Medic Alert believe it can speed treatment in an emergency and can save lives.

4. What Can Medic Alert do? Medic Alert helps prevent tragic or even fatal mistakes from being made during emergency medical treatment. Medic Alert speaks quickly for the person unable to speak for himself due to injury or illness. Every day over 14,000 people suffer needless pain and trauma because hospital emergency room staff lack critical patient information: data that could save precious time and facilitate appropriate treatment.

5. Medic Alert provides 4-way protection. Medic Alert's service is professional emergency medical identification beginning with the alerting emblem, then including our hot line, your computerized emergency medical record, and backup wallet card.

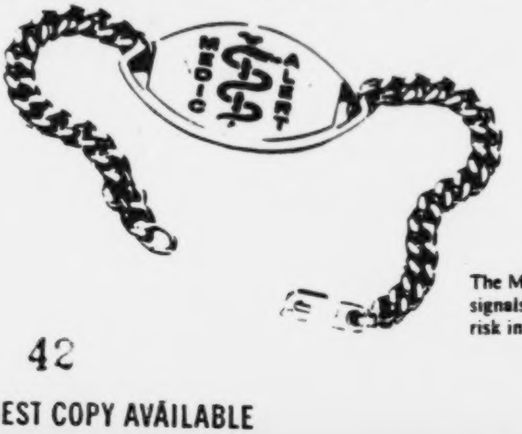
6. How does Medic Alert work? The Medic Alert emblem, which triggers the emergency medical data service, is custom engraved with the member's primary conditions, identification number, and Medic Alert's 24 hour emergency center's hot line phone number. This emblem is available as a bracelet or neckchain, and comes in stainless steel, heavy gold plate or sterling silver. A precious metal designer emblem line is also available.

7. The 24-hour emergency line is accessible from anywhere in the world. The emergency number engraved on Medic Alert's emblem, offers instant access to medical information in addition to names of physicians and family members. In an emergency, Medic Alert supplies important lifesaving information to emergency care personnel. Your emergency hot line service is guaranteed for your lifetime by the independent Medic Alert Records Trust. Only Medic Alert offers this level of protection.

8. Is Medic Alert protection expensive? Medic Alert's one-time membership fee includes a stainless steel emblem and provides protection for a lifetime. Annually you receive a wallet card copy of your computerized medical record with a reminder to keep your record up-to-date. You can update your record by phone (toll-free) or by mail. Call for current prices.

9. A universal symbol. The Medic Alert emblem bears the symbol of the medical profession, and is recognized universally. The Medic Alert Foundation has affiliate organizations in 22 countries around the world.

10. How can I join Medic Alert? Write Medic Alert Foundation, 2323 Colorado Avenue, Turlock, California 95380. Or call toll-free: 1-800-ID-ALERT (1-800-432-5378). Our staff is on duty 24 hours a day, so call today, it could one day save your life or the life of a loved one.



The Medic Alert emblem instantly signals that the wearer is at added risk in a medical emergency.

Medic Alert Foundation International

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CONDITIONS REQUIRING MEDIC ALERT

2-19

Four of our nation's leading emergency physicians have developed this list of 55 conditions. Persons with these conditions are at added risk in an emergency.

Condition Diagnosis:

Abnormal EKG
Adrenal Insufficiency
Alcoholism
Alzheimer's
Angina
Asthma
Bleeding Disorder
Blind
Blood Type
Cardiac Dysrhythmia
Cataracts
Cerebrovascular Accident
Clotting Disorder
Coronary Bypass Graft
Deaf
Diabetes/Insulin Dependent
Diabetes/Non-Insulin Dependent
Glaucoma
Heart Valve Prosthesis
Hemolytic Anemia
Hypertension
Hypoglycemia
Laryngectomy
Leukemia
Malignant Hyperthermia
Myasthenia Gravis
Pacemaker
Renal Failure/Hemodialysis
Seizure Disorder
Sickle Cell Anemia
Situs Inversus

Allergies or Sensitivities:

Aspirin
Barbiturates
Codeine
Demerol
Horse Serum
Insect Stings
Lidocaine
Morphine
Novocaine
Penicillin
Sulfa
Tetracycline
X-ray Dyes—I.V.P. Iodine

Regular Medications:

Antianginal Medications
Antiarrhythmic
Anticoagulant
Anticonvulsant
Antihistamines, Prolonged use
Beta Blocker
Cortisone
Immunosuppressant
Steroids

Special Needs:

Contact Lenses
Organ Donor
Living Will

Over 200 conditions exist that place a person at added risk in an emergency

Medic Alert Foundation International
Turlock, California 95381-1009
1-800-ID-ALERT

IN-1710
Rev. 10/91

Lesson 2

Initial Patient Approach

by Baxter Larmon and Tom Manix

Communication in prehospital care is crucial to quality patient care delivery. Humans like to think of themselves as good communicators, when in reality most are not. The prehospital system depends on a "team" approach; good communication between all parties involved is a critical aspect of patient care.

One determinant of good patient communication is the state of mind of both the provider and the patient. Accordingly, initial approach by the provider to the patient can create a proper or improper state of mind, resulting in good or poor communication.

A patient will form impressions of the EMS provider based on the initial approach. Often we form opinions of someone we really don't know based on outward appearance and mannerisms. If quality information is to be obtained from a patient, it is important to establish a positive rapport from the beginning of the call. A positive rapport may also reduce the patient's anxiety, which in and of itself is positive therapy.

The following steps should be incorporated into your initial approach to help foster a positive relationship.

Appearance. Look as professional as possible. A professional appearance will instill confidence in the patient. At all times a clean uniform should be worn. For after hour responses, check your personal appearance before arriving on the scene.

Introduction. Introduce yourself, partner and all other providers. This is a common courtesy, many times overlooked. This will provide a sense of personalization, indicating to the patient that they have your undivided attention.

Privacy. Remove all spectators from the environment. It is acceptable to let one person remain if the patient so desires. Spectators make the patient uncomfortable and can be embarrassing.

Eye Contact. Direct eye contact will help the patient gain confidence in the provider. People feel uncomfortable when an individual does not obtain or maintain eye contact.

Physical Contact. Be careful not to be too physical too fast. Try building a rapport before touching. Everyone has what has been termed "personal space." EMT's and Paramedics are taught that "hands on" contact with a patient is important. Although this is true, it is important to acknowledge their "personal space" so as not to put the patient on the defensive.

Equipment Placement. Prehospital care equipment can be extremely intimidating to a patient. Keep it out of sight, if possible. Medical equipment can increase anxiety.

Self Confidence. The patient must feel comfortable that you are in control of the situation. Try not to show the patient you may be nervous. Be aware that an aura of overconfidence can be interpreted as a cocky attitude.

Positive/Caring Affect. Treat all patients as you would want to be treated. If you are having a bad day, don't let the patient notice. Remember the patient is having an emotional experience. A little compassion will make the patient feel more at ease.

Listen. When the patient tells you something, remember it. Asking patients to repeat information may give them the impression your mind is elsewhere.

Use Common Language. When speaking to patients use simple vocabulary. Using big words and medical terminology does not impress the patient and can be intimidating. Likewise, do not speak 'baby talk' to kids. In most cases it is not necessary to shout at the elderly.

Explanation. Give a short explanation of what you are doing and why it is necessary. Patients deserve this courtesy. A simple explanation can reduce anxiety and fears.

Treatment. Something should be done in the way of treatment as soon as possible, no matter how minor the problem may seem. Covering wounds, positioning, oxygen, even placement of a blood pressure cuff gives the appearance to the patient that you are competent and are there to help.

If your initial approach does not include the above, you may find it difficult to gather a complete report. An adversarial relationship may increase anxiety and make their chief complaint worse. Although these steps seem simple, they are rarely taught or reinforced in primary EMS training. Obtaining a patient history, physical exam, and treatment is difficult at times. Using these steps should assist you in accomplishing your goals.

Baxter Larmon MICP is the Director of the Center for Prehospital Care at the University of California at Los Angeles Medical Center. He has written extensively on prehospital care subjects and is a well respected lecturer at EMS conferences.

Tom Manix MICP is the Educational Coordinator of the Center for Prehospital Care at the University of California at the Los Angeles Medical Center.

☐☐

IOWA PREHOSPITAL CARE REPORT

2-22 241-01

Date of Run mo day yr

Medical Record #

Service Name ______ Service # ______ Vehicle # ______ Dispatch # ______

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other Trauma Patient ID #

PATIENT INFORMATION

Last Name First MI

Home Address Street/RFD

City State Zip

Age ______ DOB mo day yr Sex: M F

Physician(s)

Insurance

VITAL SIGNS

Time	Respiratory A Rate	Respiratory B Effort	Pulse Rate	Pulse Qual	B/P C	Cap Ref D	Glasgow Scale Eye (4)	Ver (5)	Mot (6)	Tot (15)	E Trauma Score = A+B+C+D+E
		1 Nor 0 Abn 0 Abs		0 Reg 0 Irr		2 Nor 1 Del 0 Abs					
		1 Nor 0 Abn 0 Abs		0 Reg 0 Irr		2 Nor 1 Del 0 Abs					
		1 Nor 0 Abn 0 Abs		0 Reg 0 Irr		2 Nor 1 Del 0 Abs					

Lung Sounds

Skin Color/Temp/Moist

Pupils

PAST MED HISTORY ______ MEDIC ALERT Y N

CURRENT MEDS ______ ALLERGIES

Time NARRATIVE

SIGNS & SYMPTOMS

Reported Time of Onset	Min 0-5	6-30	31-59	Hrs 1-12	> 12	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
09 Fainting	A	B	C	D	E	F	G
10 Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

01 Allergic Reaction
02 Behavioral/OD
03 Cancer
04 Cardiac
05 Cardio/Resp
06 Diabetes
07 Exposure—Cold
08 Exposure—Heat
09 GI/GU
10 Neonate
11 Neuro/Seizure
12 OB/GYN
13 Poison
14 Respiratory
15 Trauma
16 Vascular/Stroke
99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
07 Back/Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

01 Assault/Batt
02 Bicycle
03 Chemical
04 Electrical
05 Fall
06 Fire/Explos
07 Gun/Knife
08 Moped
09 Motor Veh
10 Motorcycle
11 Rail/Air
12 Sports/Rec
13 Veh/Ped
14 Water Acc
99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out					A B C D
At Scene			Y N	Y N	A B C D
Dep Scene					A B C D
At Dest			Y N	Y N	A B C D
In Serv			Scheduled Run		A Critical C Minor
At Base			Y N		B Moderate D DOA

MILEAGE

Ending
Beginning
Run Total
To Scene To Dest

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req.	Y	N	U	N/A

TREATMENT (TX)

01 Airway Cleared
02 Airway Adjunct ______ type
03 Bleed Control ______ method
04 Cervical Collar
05 Cold Applied
06 CPR (time began) ______
07 Dressing Applied
08 Elevation
09 Heat Applied
10 Irrigation
11 MAST Applied
12 MAST Inflated ______ time
13 OB Assist
14 O_2 ______ LPM via ______
15 Poison TX ______ type
16 Psychological Support
17 Restraints Used
Scoop Stretcher
Spineboard-Long
Spineboard-Short
21 Splint ______ type
99 Other
00 Transport Only/No TX

LOCATION

County No —

A Interstate
B US/St Hwy
C Co Road
D Street
E Farm
F Residence
G Public Bldg
H Hospital #
J Nursing Home #
K Dr Off/Clinic #
L Recreation
Z Other

DISPOSITION

County No —

A Hospital #
B Nursing Home #
C Dr Off/Clinic #
D Ambulance #
Pt Released to ______
E Residence
F Refused Transport
Z Other

Aid Requested By:

01 Citizen
02 Dispatcher
03 Family
04 Fire Dept
05 Law Enforcement
06 Med Personnel
07 Patient
88 Unknown
99 Other

Hospital Decided By:

A Patient
B Family
C Physician
D Location
E Medical Direction
F Service
G Trauma Criteria
Z Other

Aid Provided By Others?

	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL

Title/Cert #

Driver ______
Attendant ______
Attendant ______
Attendant ______

Report Completed By ______

Report Completed On mo day yr ______ time

488051

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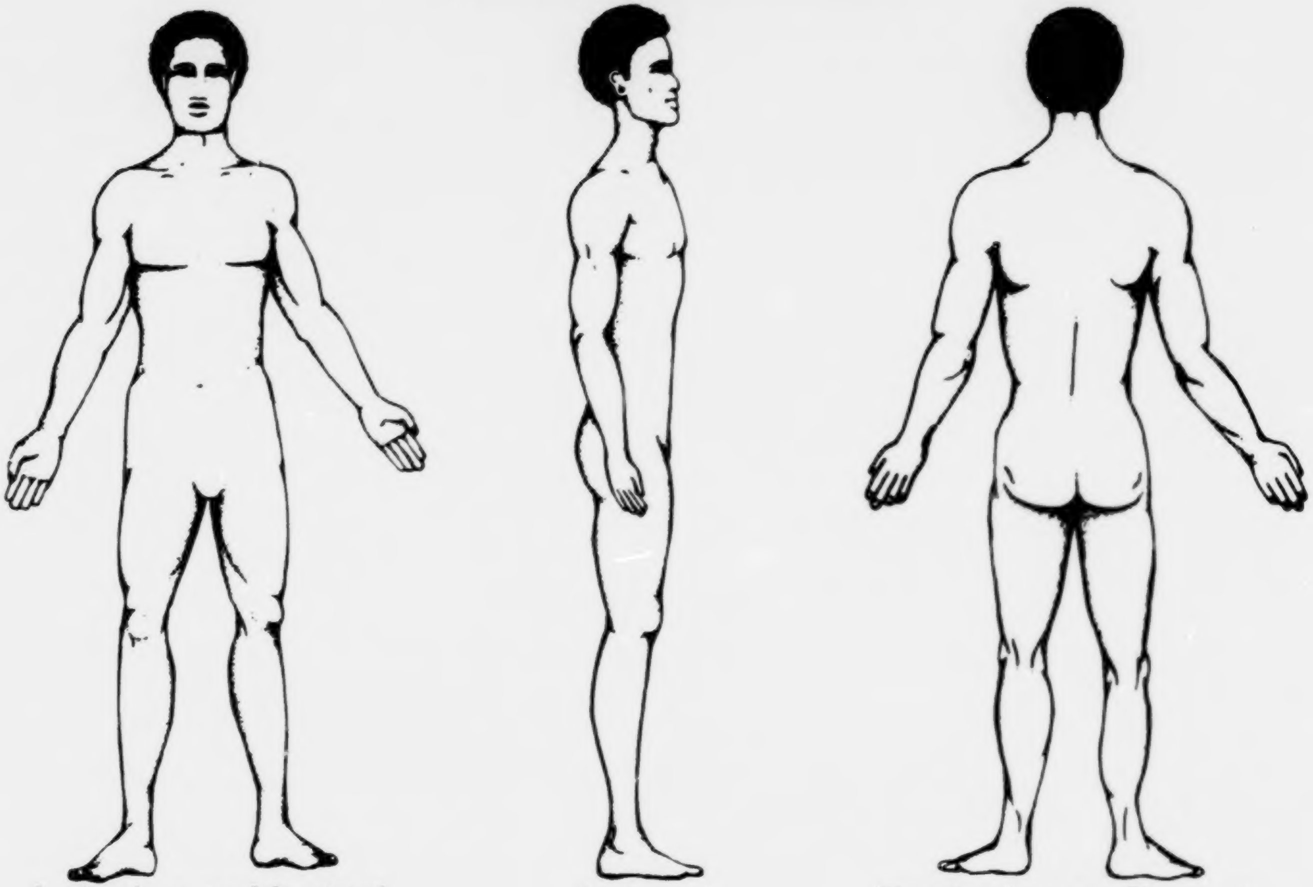
☐ Check if ALS was provided

Anatomical Position

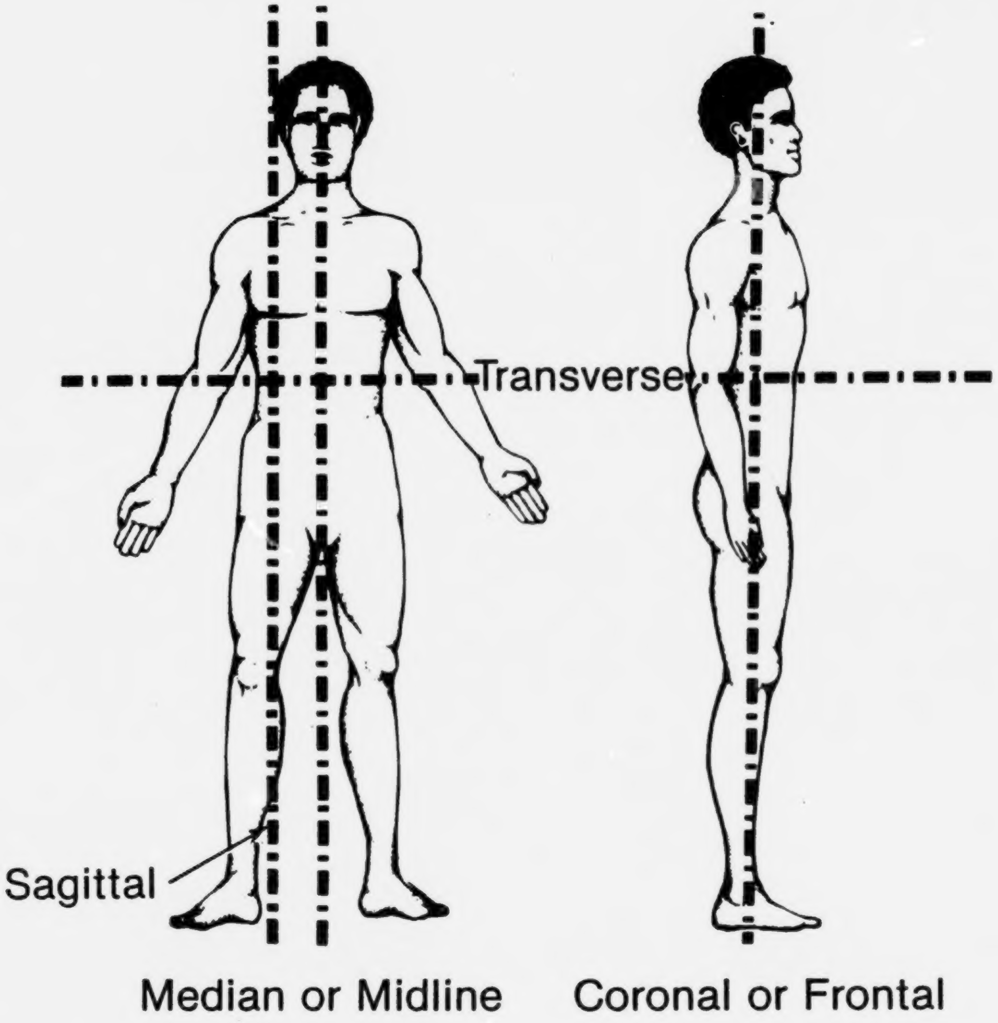


Anterior or Ventral View

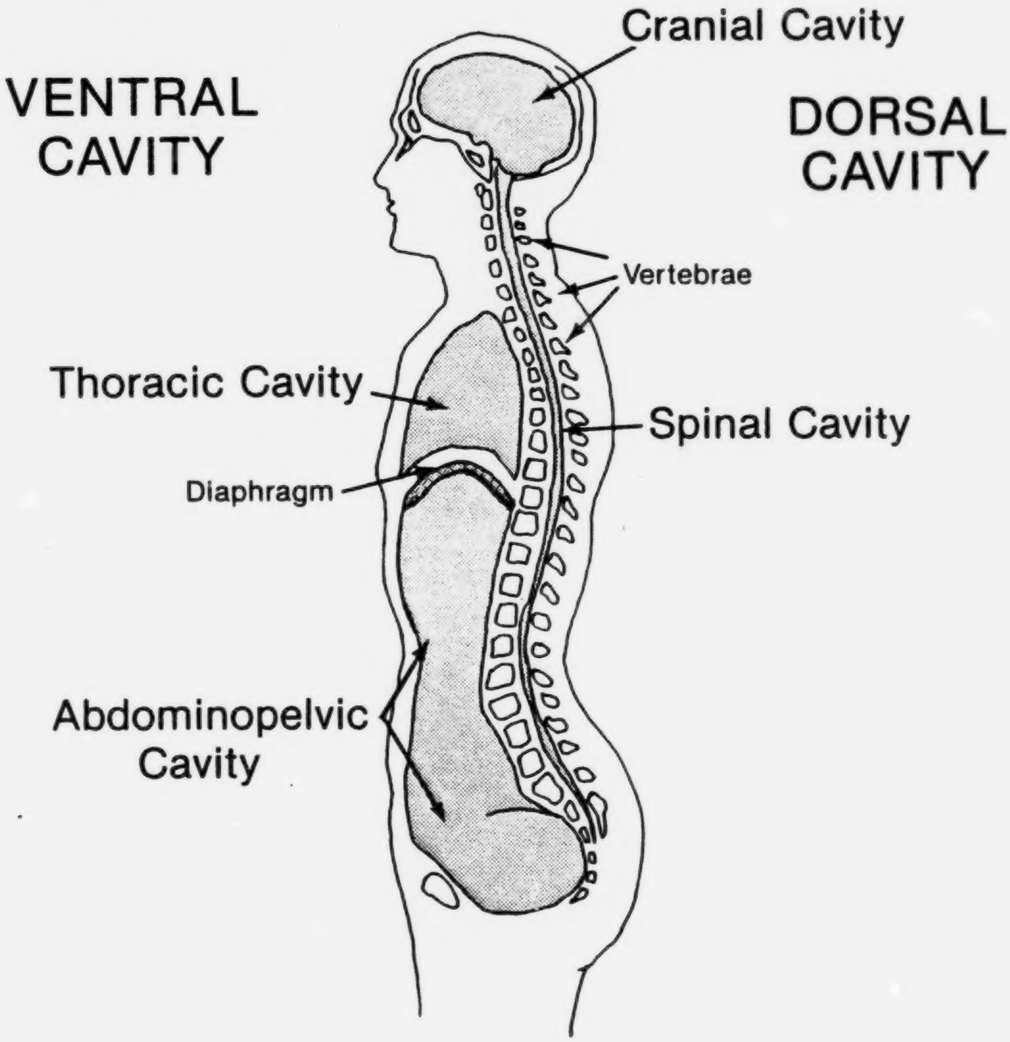
Lateral View

Posterior or Dorsal View

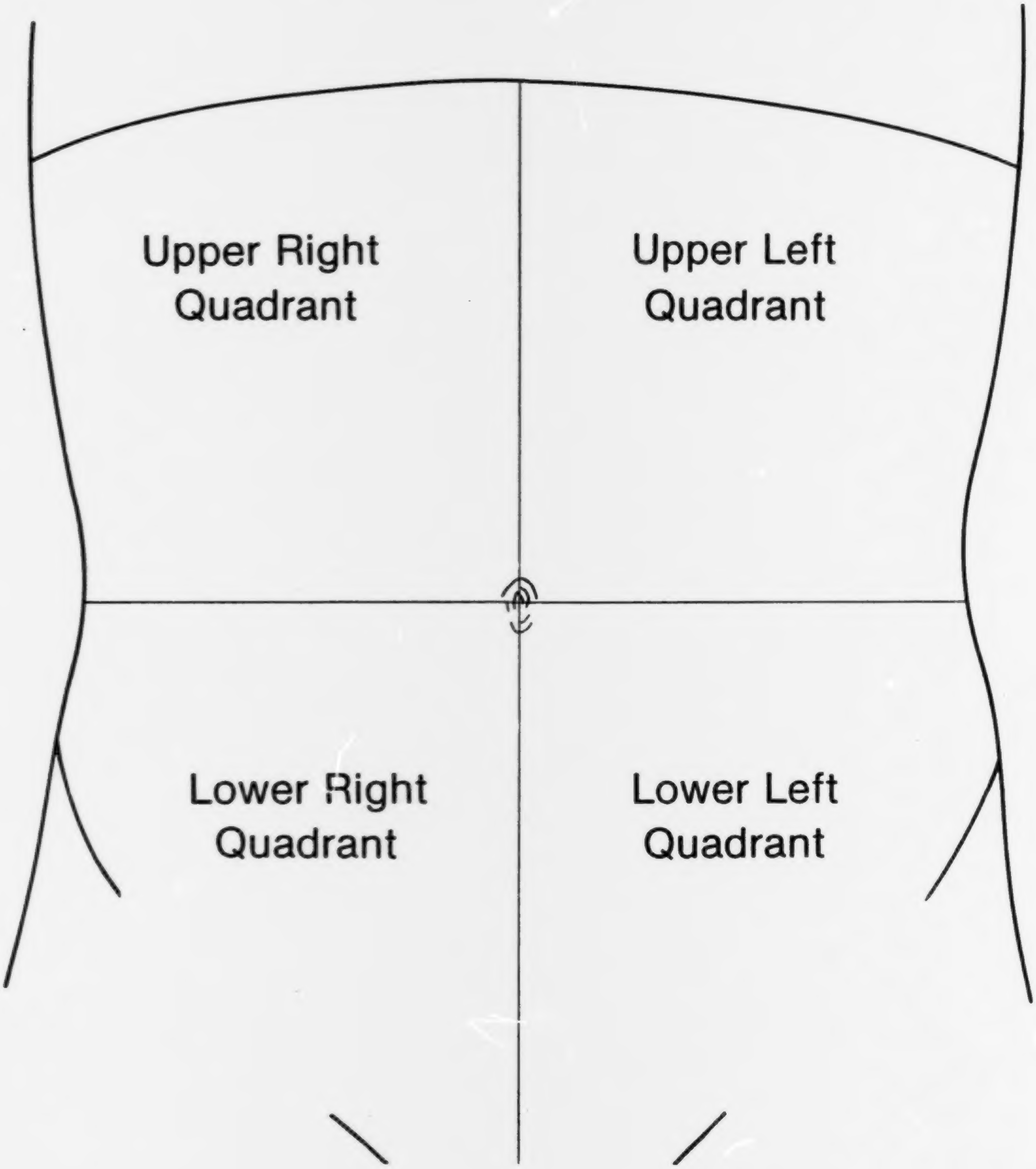
Planes


Transverse
Sagittal
Median or Midline
Coronal or Frontal

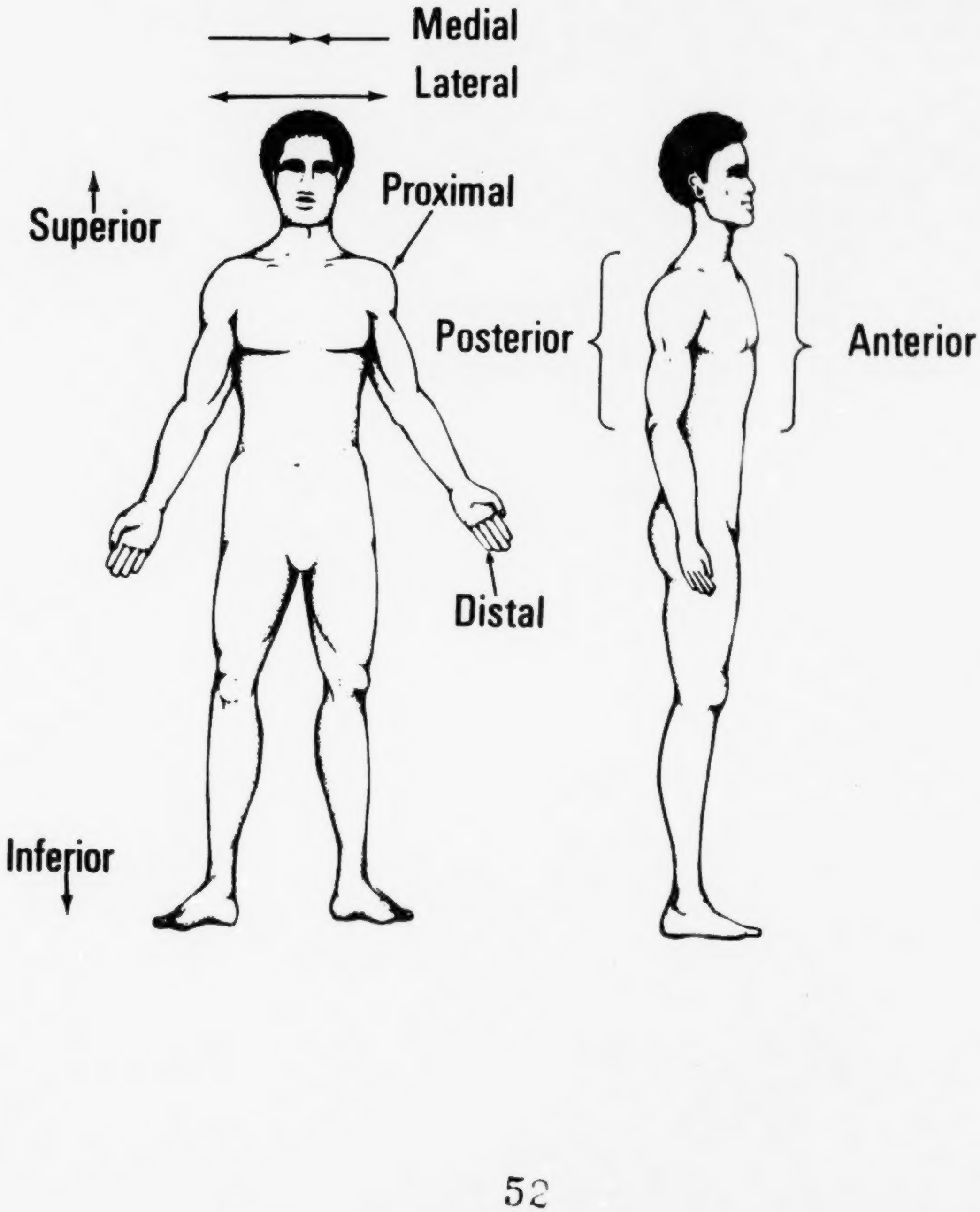
Body Cavities
(Side View)


Cranial Cavity
VENTRAL CAVITY
DORSAL CAVITY
Vertebrae
Thoracic Cavity
Spinal Cavity
Diaphragm
Abdominopelvic Cavity

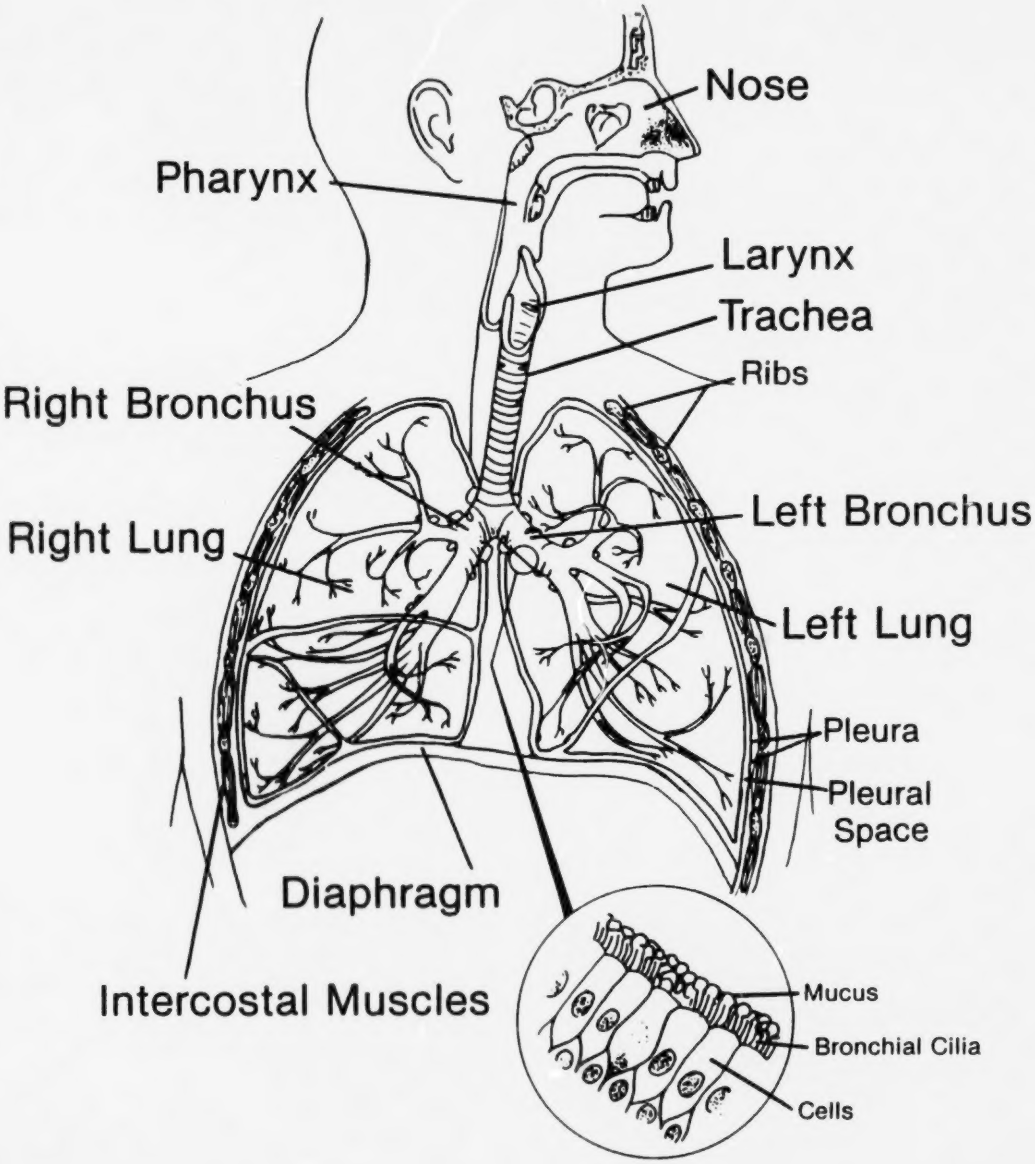
Quadrants of the Abdominopelvic Cavity


Upper Right
Quadrant
Upper Left
Quadrant
Lower Right
Quadrant
Lower Left
Quadrant

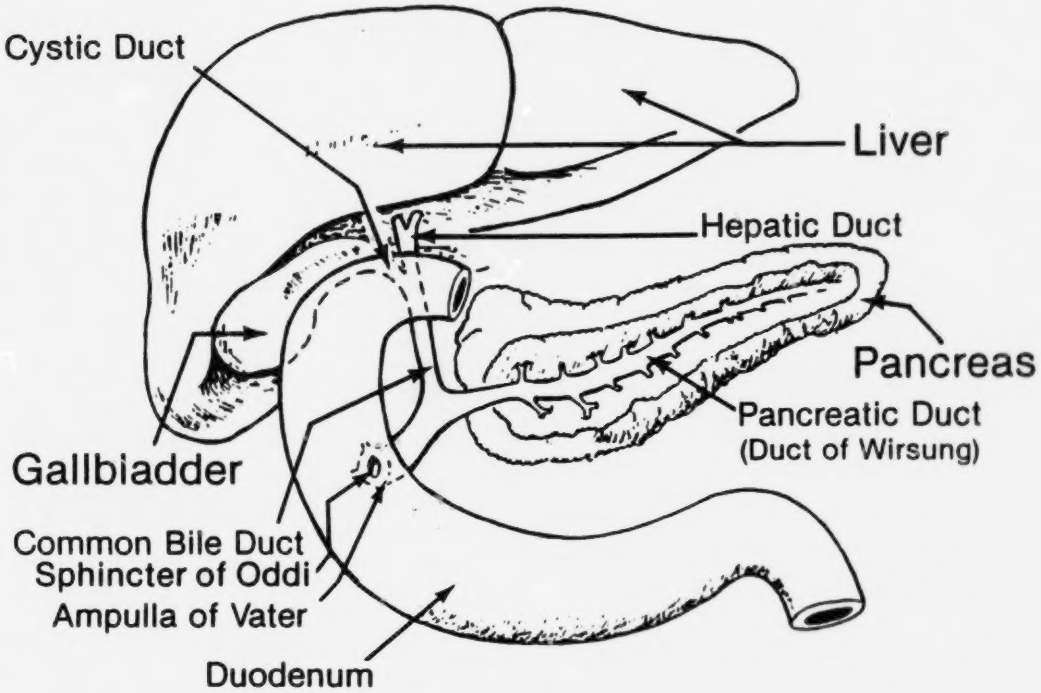
Directions


Medial
Lateral
Superior
Proximal
Posterior
Anterior
Distal
Inferior

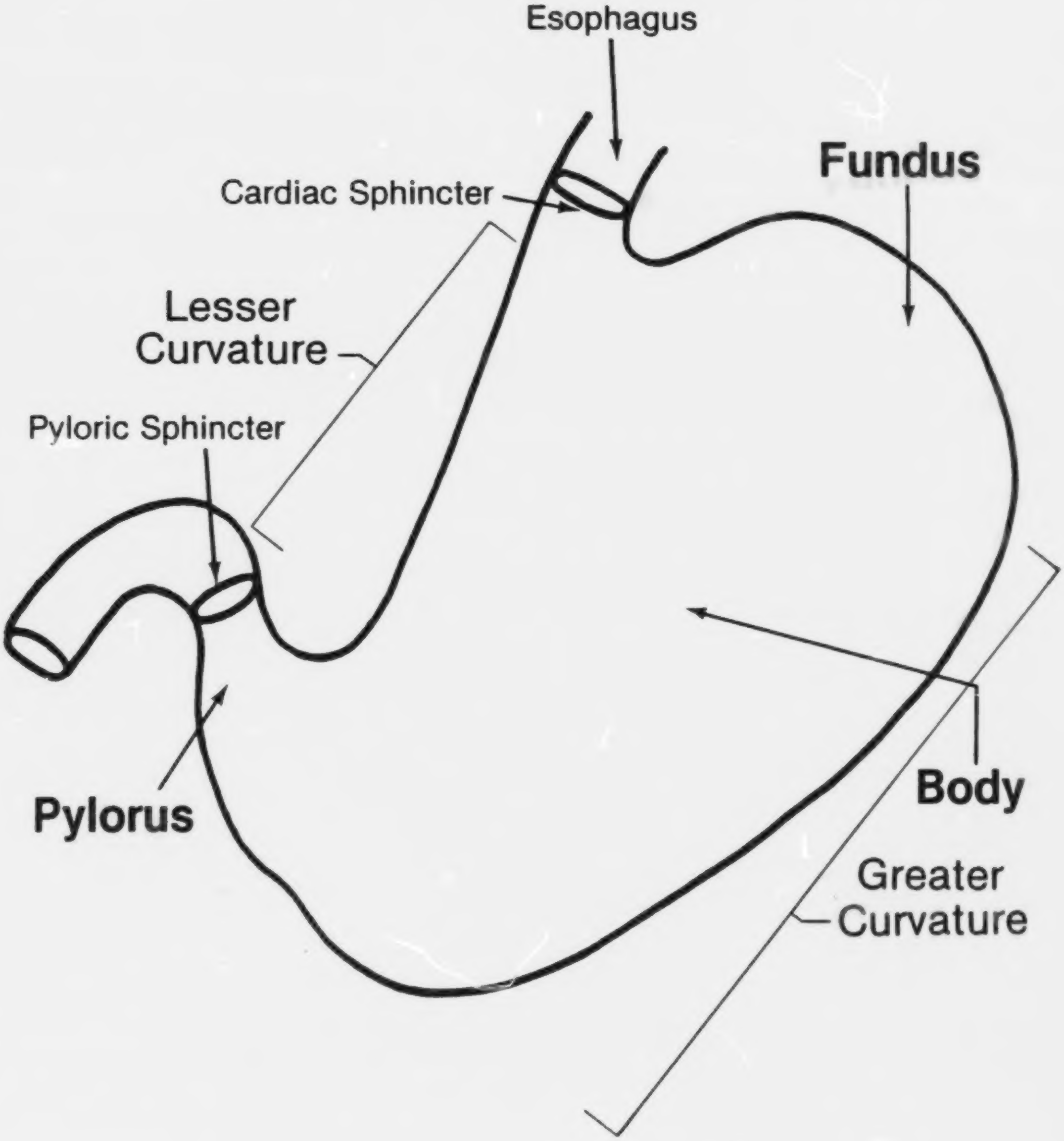
The Respiratory System


Nose
Pharynx
Larynx
Trachea
Ribs
Right Bronchus
Left Bronchus
Right Lung
Left Lung
Pleura
Pleural Space
Diaphragm
Intercostal Muscles
Mucus
Bronchial Cilia
Cells

The Liver, Gallbladder, and Pancreas


Cystic Duct
Liver
Hepatic Duct
Pancreas
Pancreatic Duct
(Duct of Wirsung)
Gallbladder
Common Bile Duct
Sphincter of Oddi
Ampulla of Vater
Duodenum

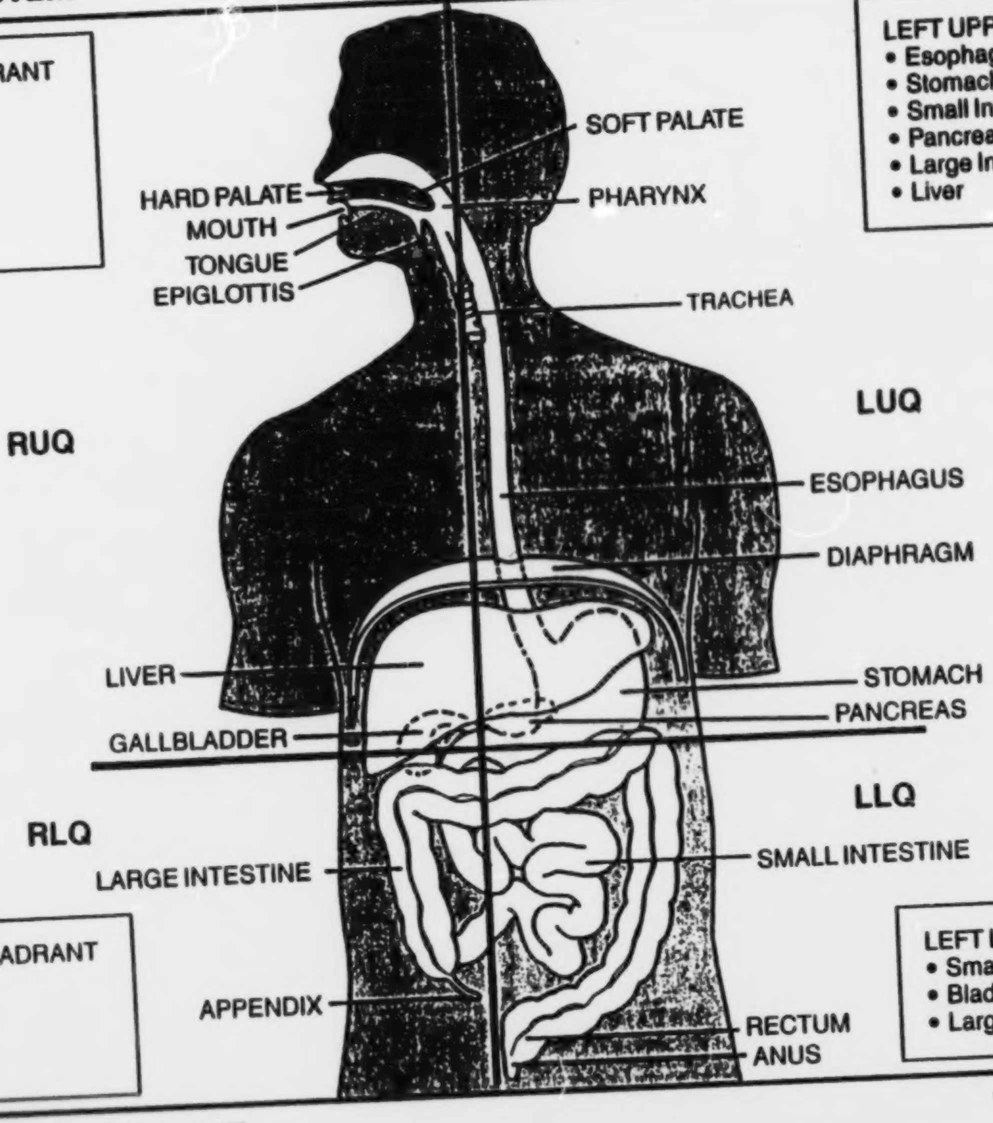
Parts of the Stomach


Esophagus
Fundus
Cardiac Sphincter
Lesser Curvature
Pyloric Sphincter
Pylorus
Body
Greater Curvature

THE DIGESTIVE SYSTEM

RIGHT UPPER QUADRANT
- Liver & Bileducts
- Gallbladder
- Small portion of stomach
- Pancreas
- Large Intestine

LEFT UPPER QUADRANT
- Esophagus
- Stomach
- Small Intestine
- Pancreas
- Large Intestine
- Liver


SOFT PALATE
HARD PALATE
PHARYNX
MOUTH
TONGUE
EPIGLOTTIS
TRACHEA
LUQ
RUQ
ESOPHAGUS
DIAPHRAGM
LIVER
STOMACH
PANCREAS
GALLBLADDER
LLQ
RLQ
SMALL INTESTINE
LARGE INTESTINE
APPENDIX
RECTUM
ANUS

RIGHT LOWER QUADRANT
- Small Intestine
- Bladder
- Large Intestine
- Appendix

LEFT LOWER QUADRANT
- Small Intestine
- Bladder
- Large Intestine

*See Page 268 in AAOS Text

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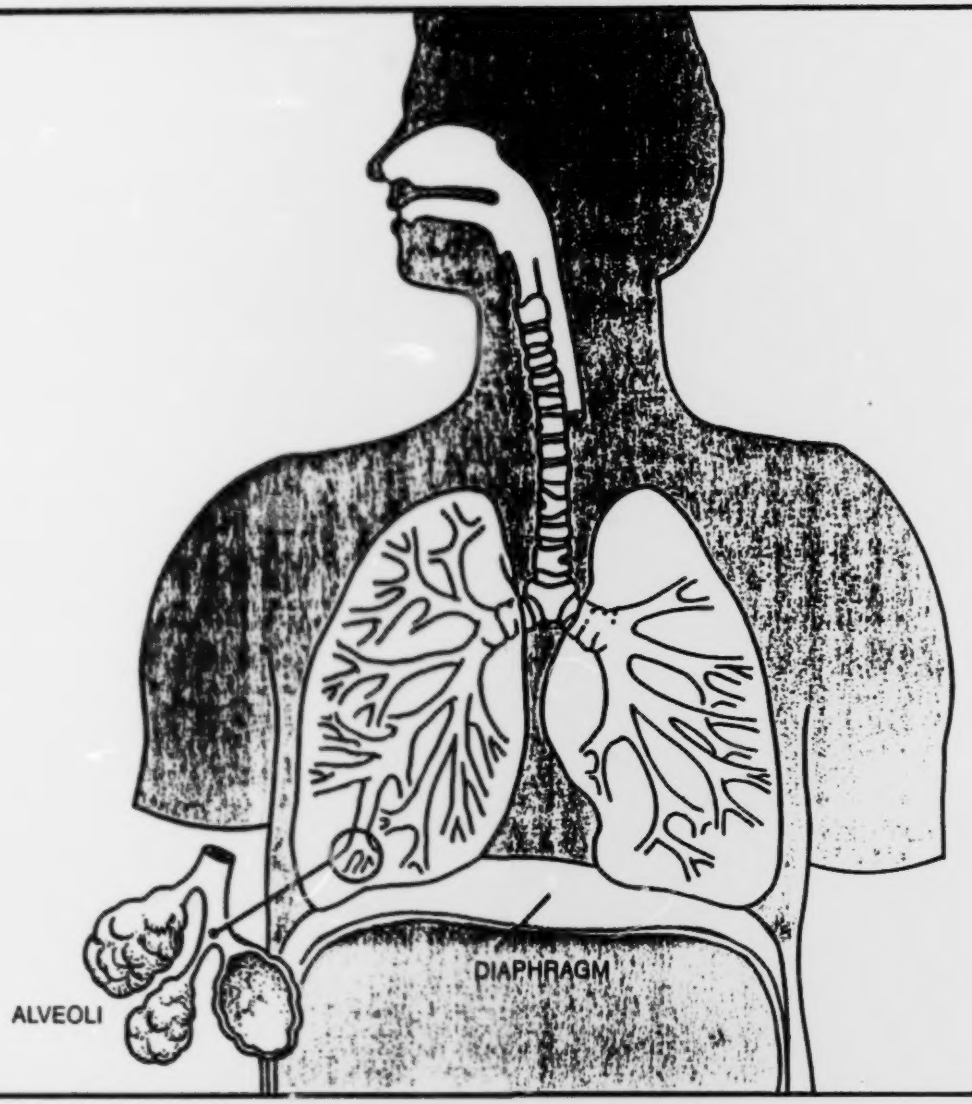
THE RESPIRATORY SYSTEM



AIR PATHWAY

Upper airway	Nose & Mouth ↓ Throat
↓	↓
Lower airway	Larynx ↓ Trachea ↓ Bronchi
↓	↓
Air passages within the lungs	Lungs Oxygen 0^2 passed into blood, carbon dioxide CO^2 is removed

Respiratory System also includes the diaphragm, muscles of the chest wall and other accessory muscles used in breathing.

*See page 67 AAOS Text

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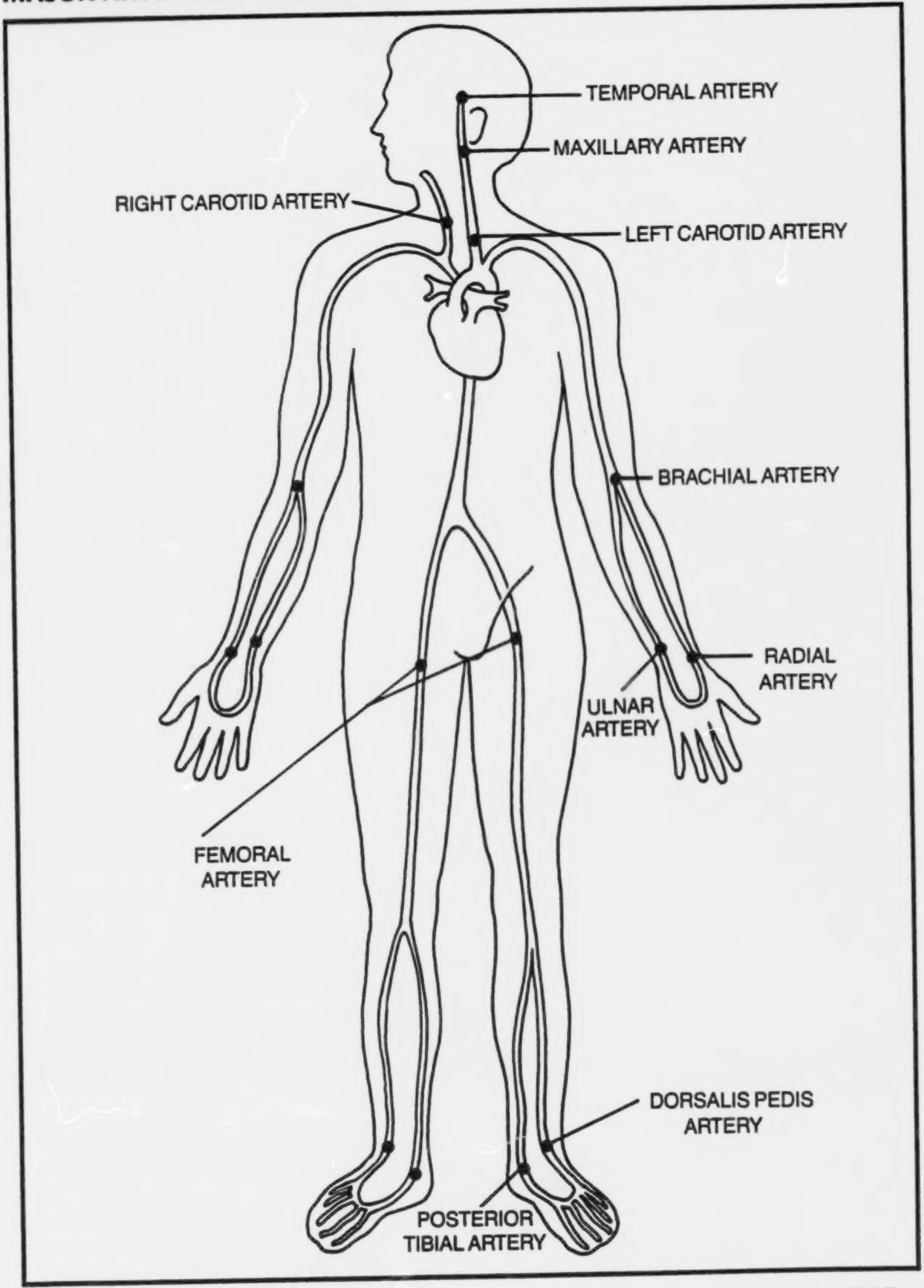
MAJOR ARTERIAL PULSE SITES


TEMPORAL ARTERY
MAXILLARY ARTERY
RIGHT CAROTID ARTERY
LEFT CAROTID ARTERY
BRACHIAL ARTERY
RADIAL ARTERY
ULNAR ARTERY
FEMORAL ARTERY
DORSALIS PEDIS ARTERY
POSTERIOR TIBIAL ARTERY

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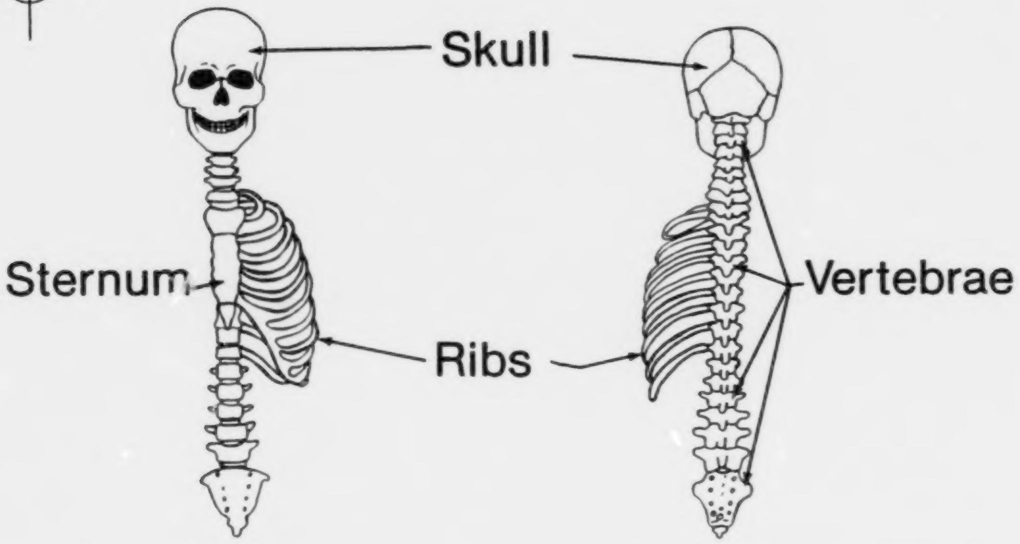
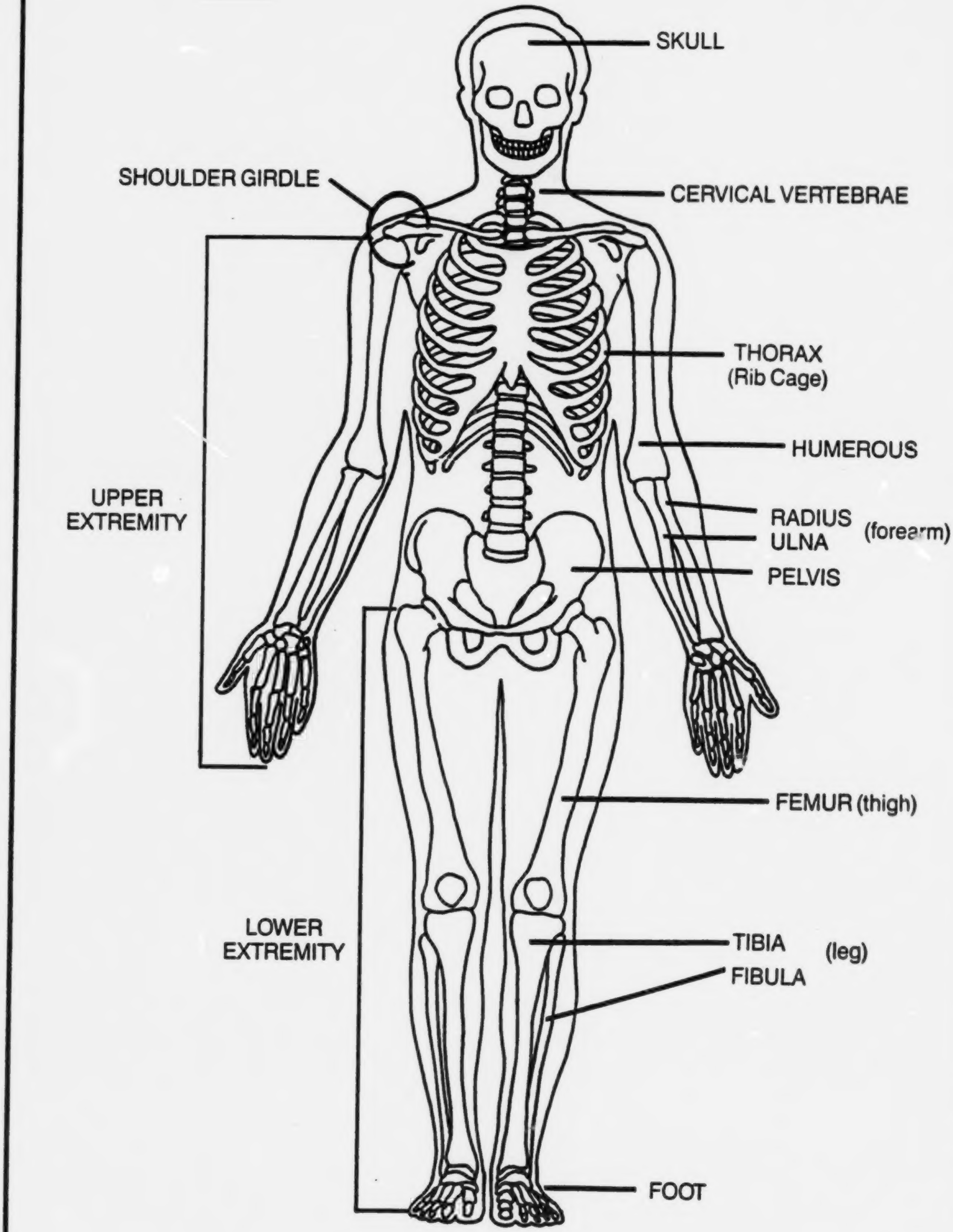
*See page 33, AAOS Text

Axial Skeleton


Skull
Sternum
Vertebrae
Ribs

Anterior Posterior

THE SKELETAL SYSTEM


SKULL
SHOULDER GIRDLE
CERVICAL VERTEBRAE
THORAX
(Rib Cage)
HUMEROUS
UPPER EXTREMITY
RADIUS
ULNA
(forearm)
PELVIS
FEMUR (thigh)
LOWER EXTREMITY
TIBIA
FIBULA
(leg)
FOOT

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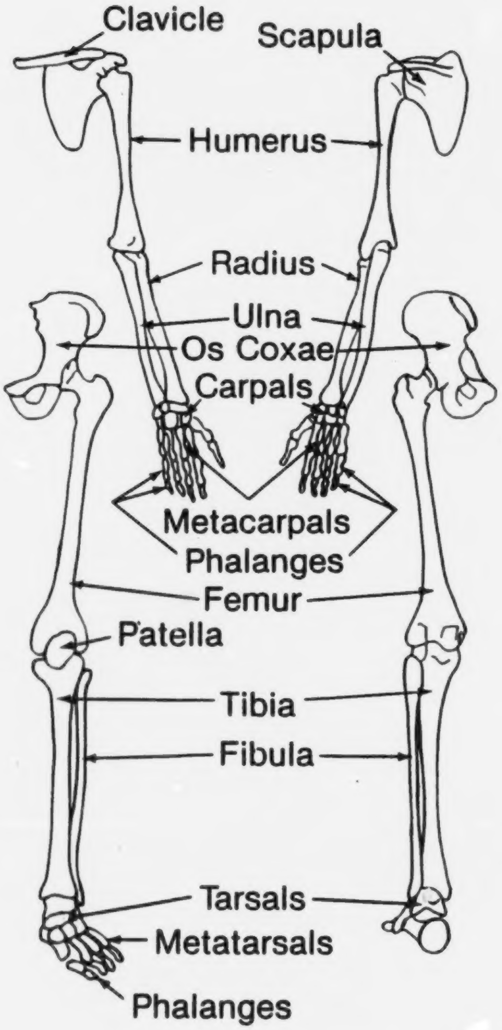
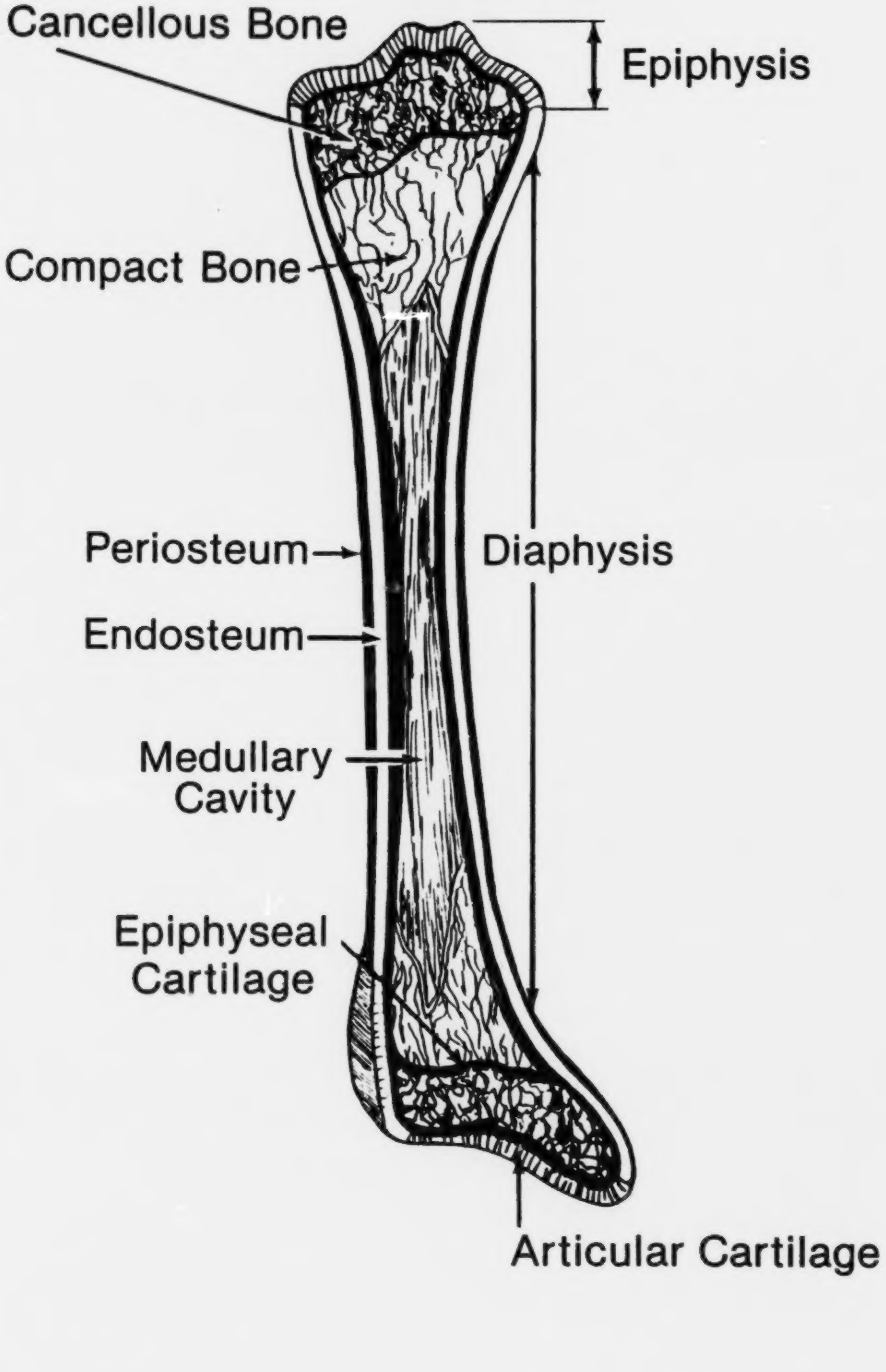
*See page 165 AAOS Text

Appendicular Skeleton

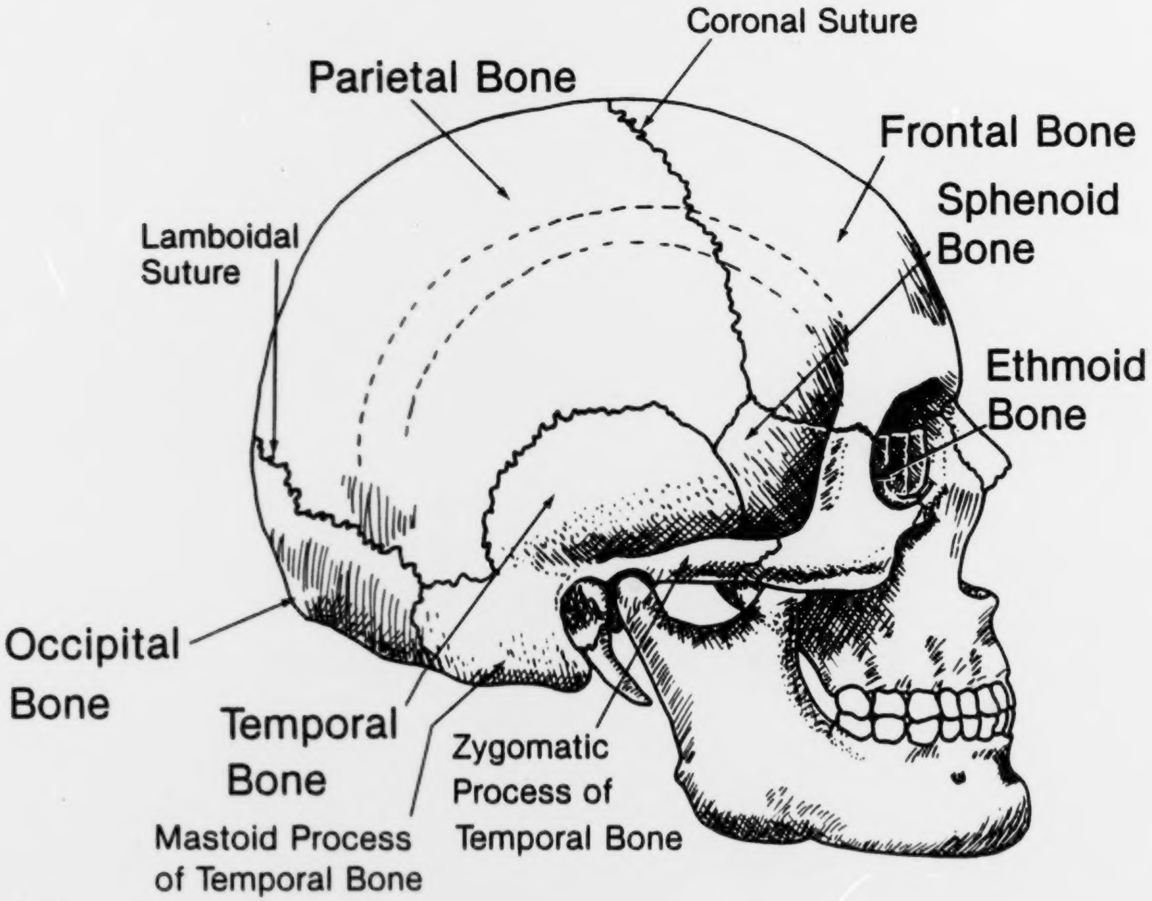

Clavicle
Scapula
Humerus
Radius
Ulna
Os Coxae
Carpals
Metacarpals
Phalanges
Femur
Patella
Tibia
Fibula
Tarsals
Metatarsals
Phalanges

Anterior Posterior

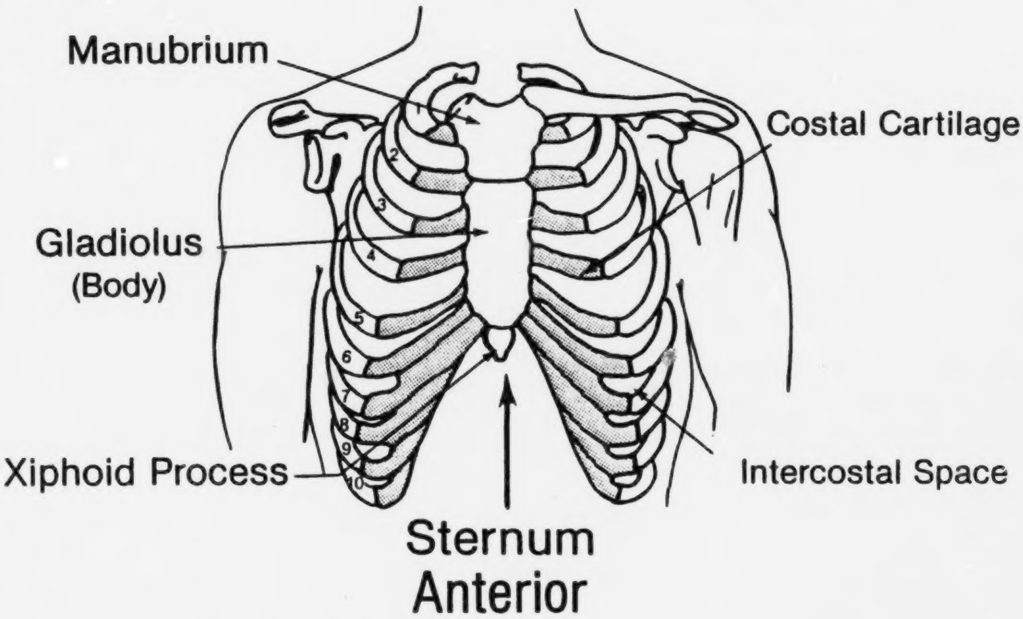
Structures of a Long Bone

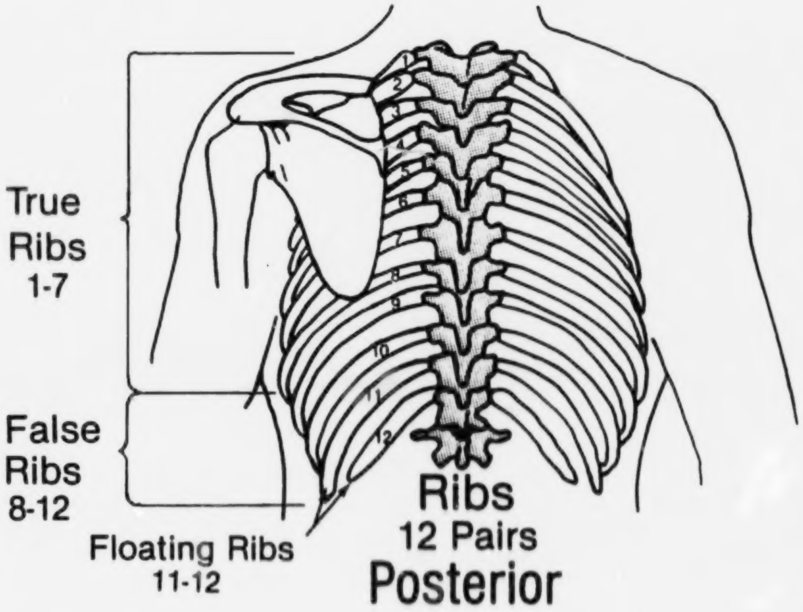

Cancellous Bone
Epiphysis
Compact Bone
Periosteum
Diaphysis
Endosteum
Medullary Cavity
Epiphyseal Cartilage
Articular Cartilage

Bones of the Cranium

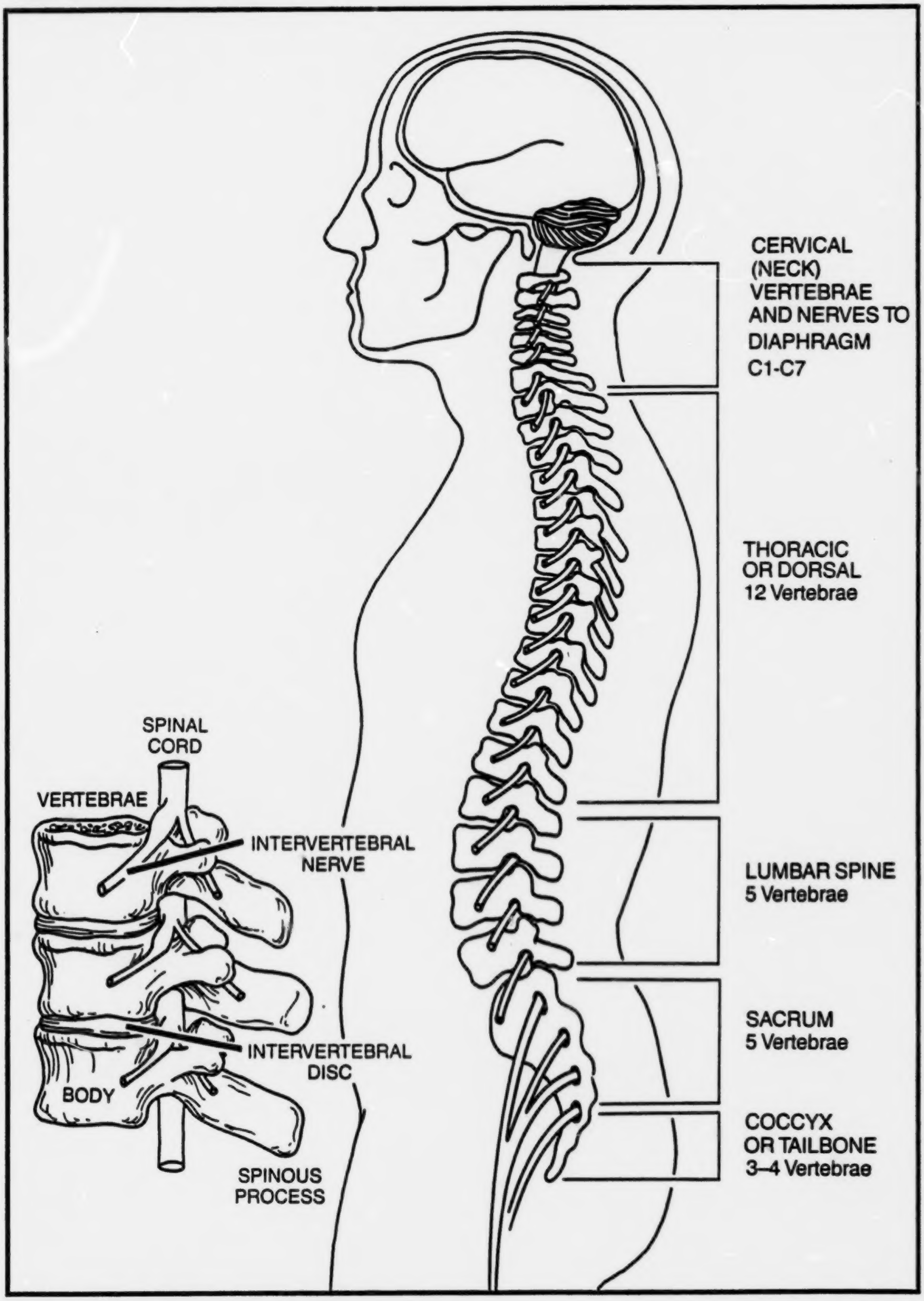

Coronal Suture
Parietal Bone
Frontal Bone
Sphenoid Bone
Lamboidal Suture
Ethmoid Bone
Occipital Bone
Temporal Bone
Zygomatic Process of Temporal Bone
Mastoid Process of Temporal Bone

The Ribs and Sternum


Manubrium
Costal Cartilage
Gladiolus
(Body)
Xiphoid Process
Intercostal Space
2
3
4
5
6
7
8
9
10
Sternum
Anterior


True
Ribs
1-7
False
Ribs
8-12
Floating Ribs
11-12
1
2
3
4
5
6
7
8
9
10
11
12
Ribs
12 Pairs
Posterior

THE SPINAL COLUMN


CERVICAL (NECK) VERTEBRAE AND NERVES TO DIAPHRAGM C1-C7
THORACIC OR DORSAL 12 Vertebrae
LUMBAR SPINE 5 Vertebrae
SACRUM 5 Vertebrae
COCCYX OR TAILBONE 3–4 Vertebrae
SPINAL CORD
VERTEBRAE
INTERVERTEBRAL NERVE
INTERVERTEBRAL DISC
BODY
SPINOUS PROCESS

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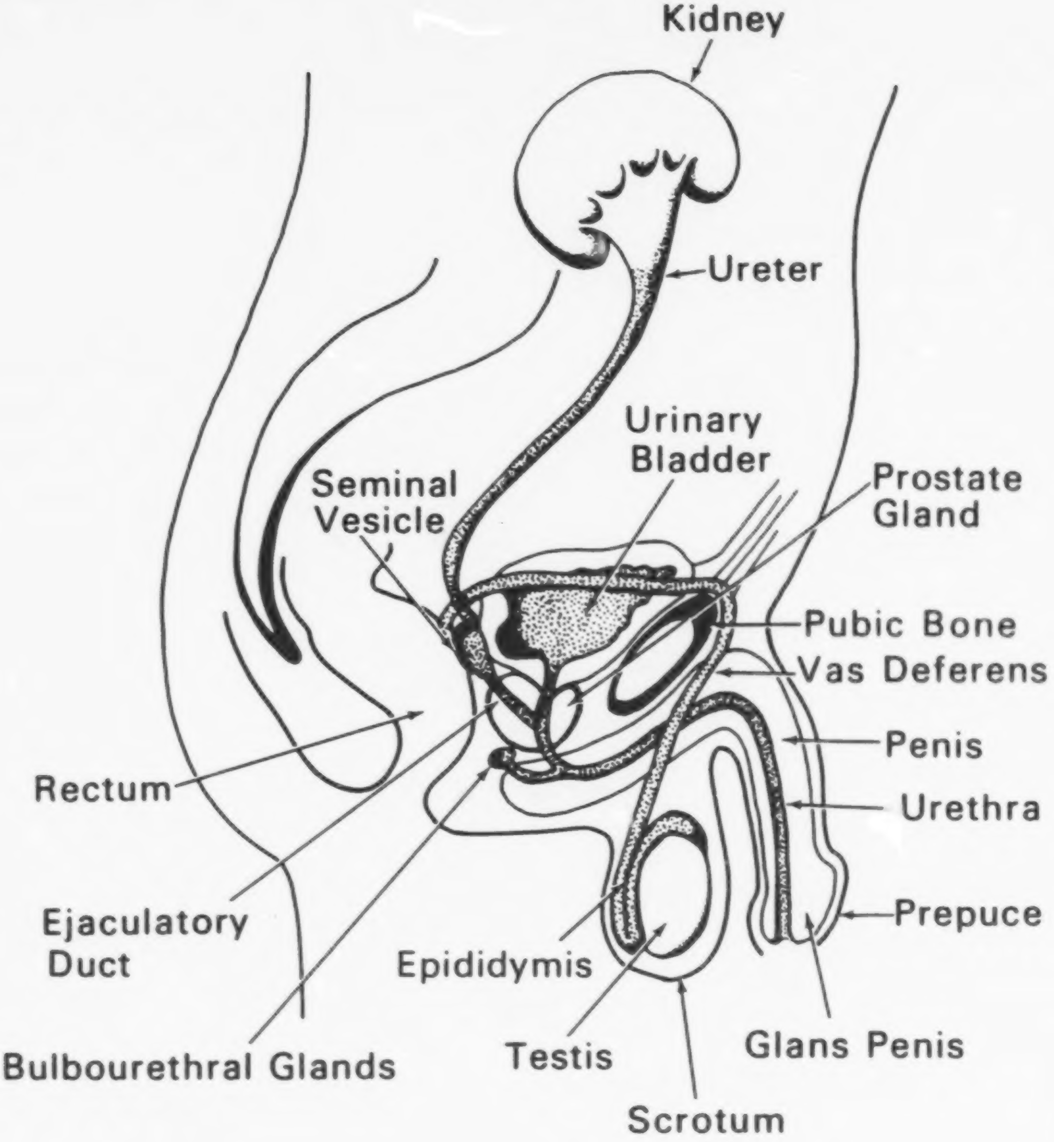
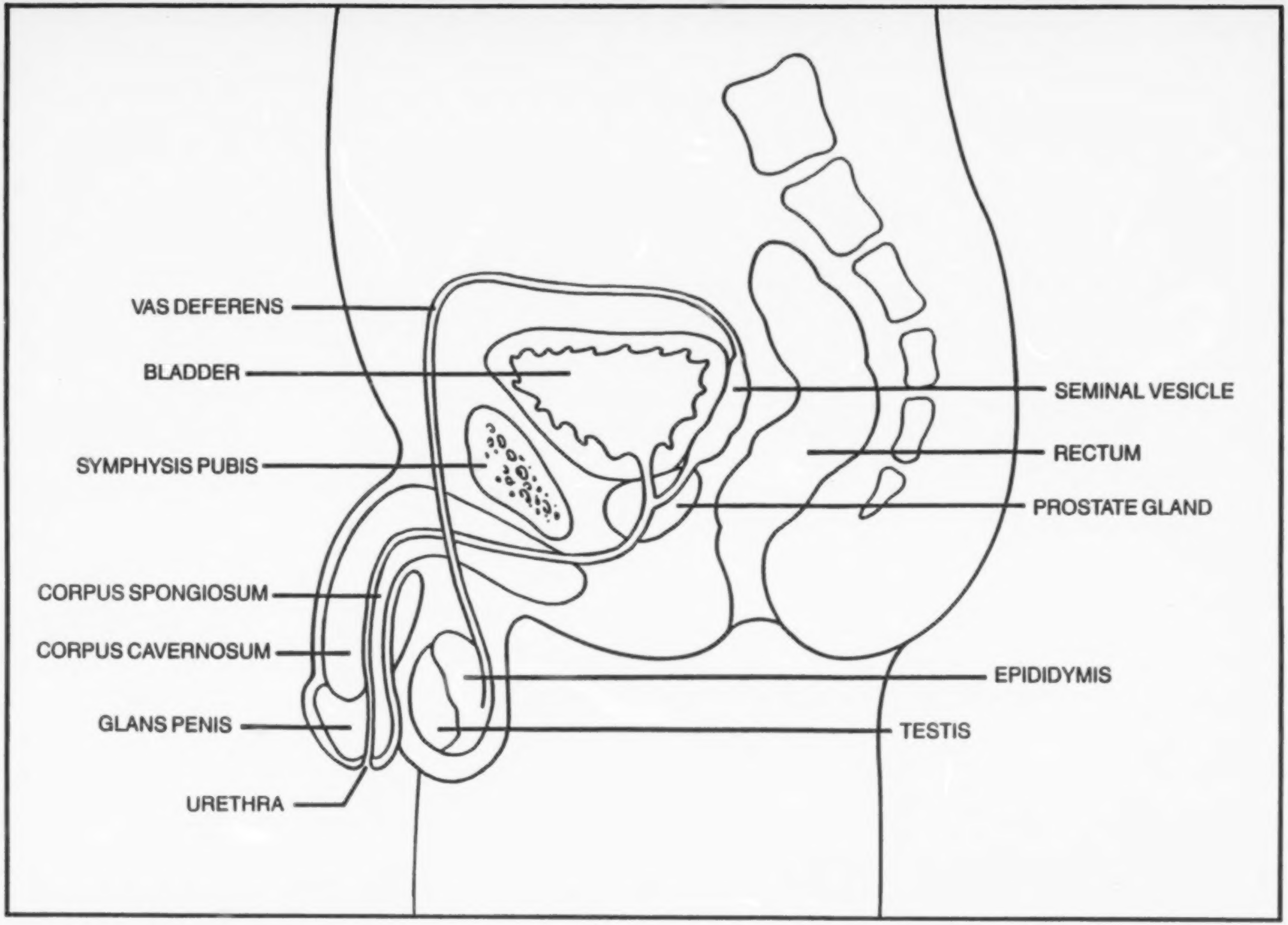
*See pages 232–233 AAOS Text

Male Reproductive System


Kidney
Ureter
Urinary Bladder
Seminal Vesicle
Prostate Gland
Pubic Bone
Vas Deferens
Penis
Urethra
Rectum
Prepuce
Ejaculatory Duct
Epididymis
Bulbourethral Glands
Testis
Glans Penis
Scrotum


VAS DEFERENS
BLADDER
SYMPHYSIS PUBIS
CORPUS SPONGIOSUM
CORPUS CAVERNOSUM
GLANS PENIS
URETHRA
SEMINAL VESICLE
RECTUM
PROSTATE GLAND
EPIDIDYMIS
TESTIS

*See page 273, AAOS Text

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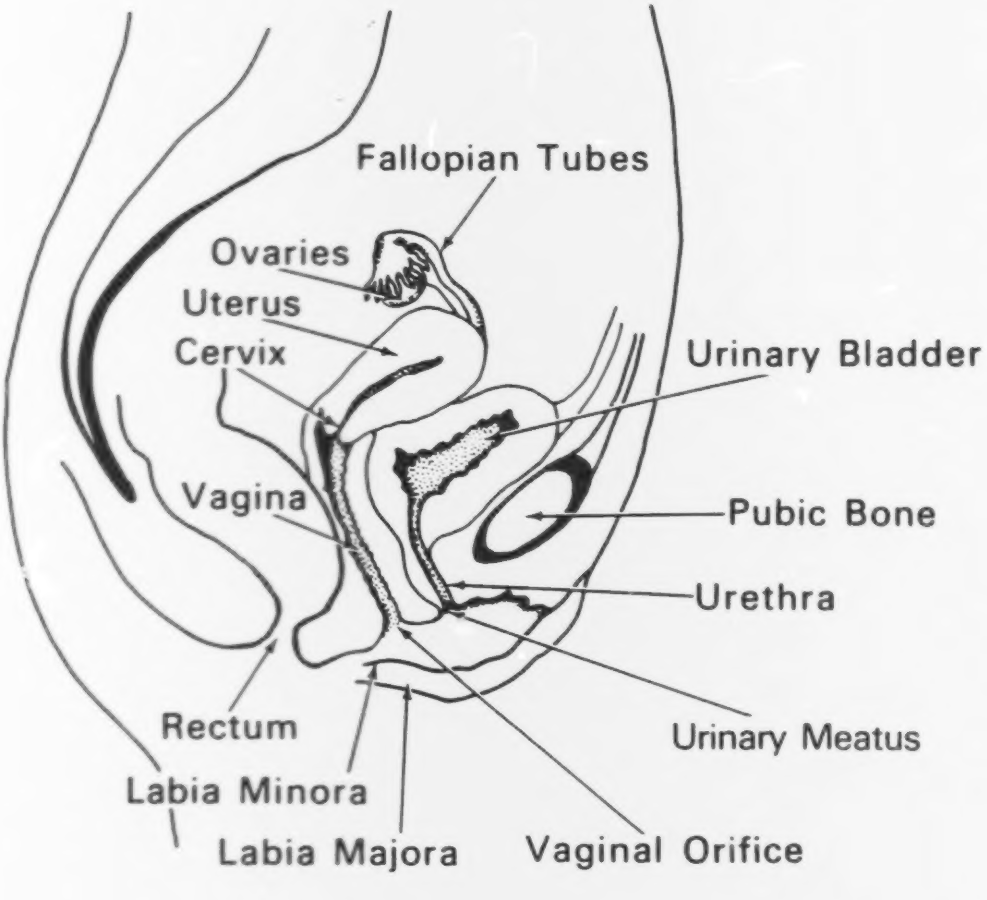
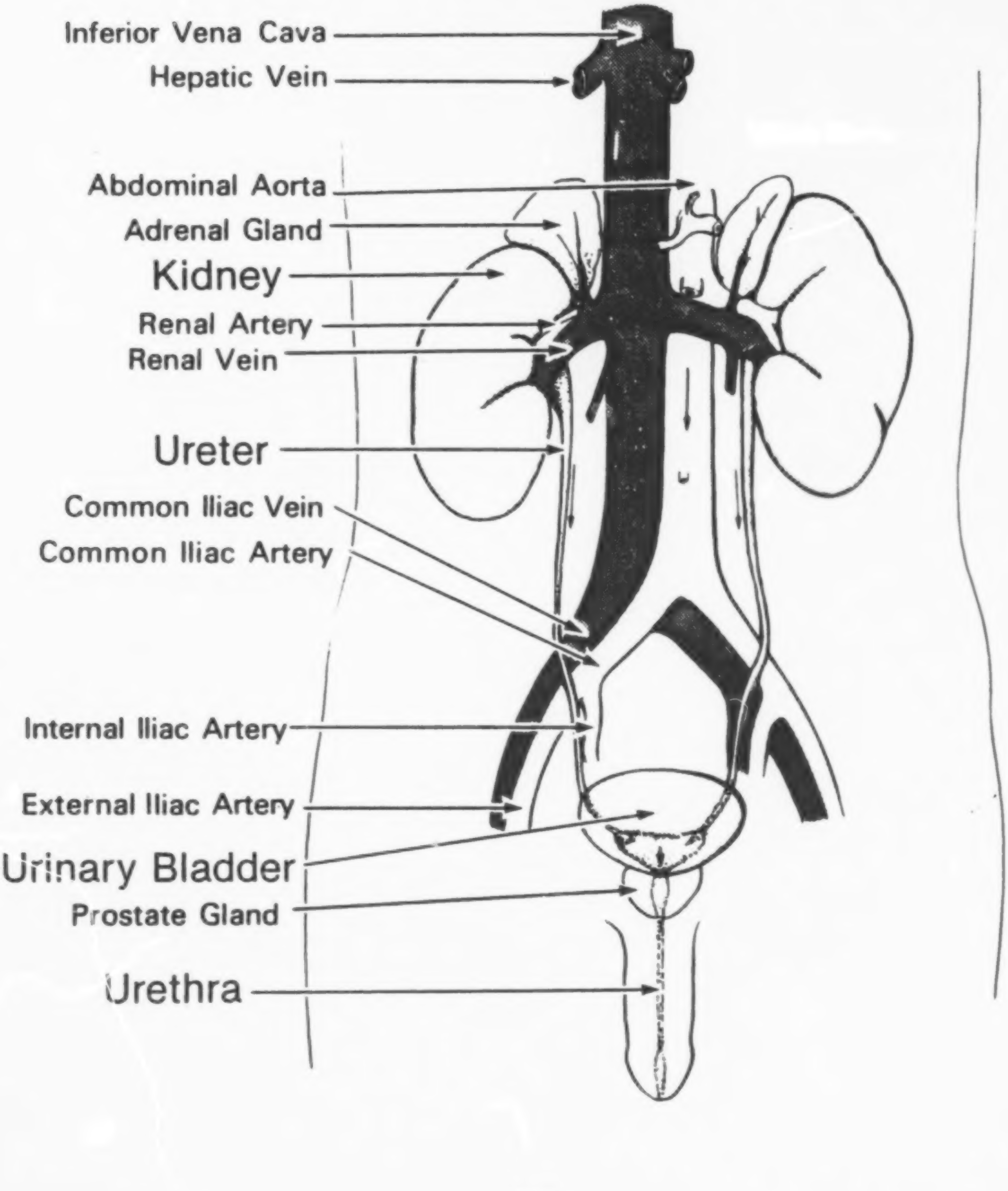
2-42

Female Reproductive System

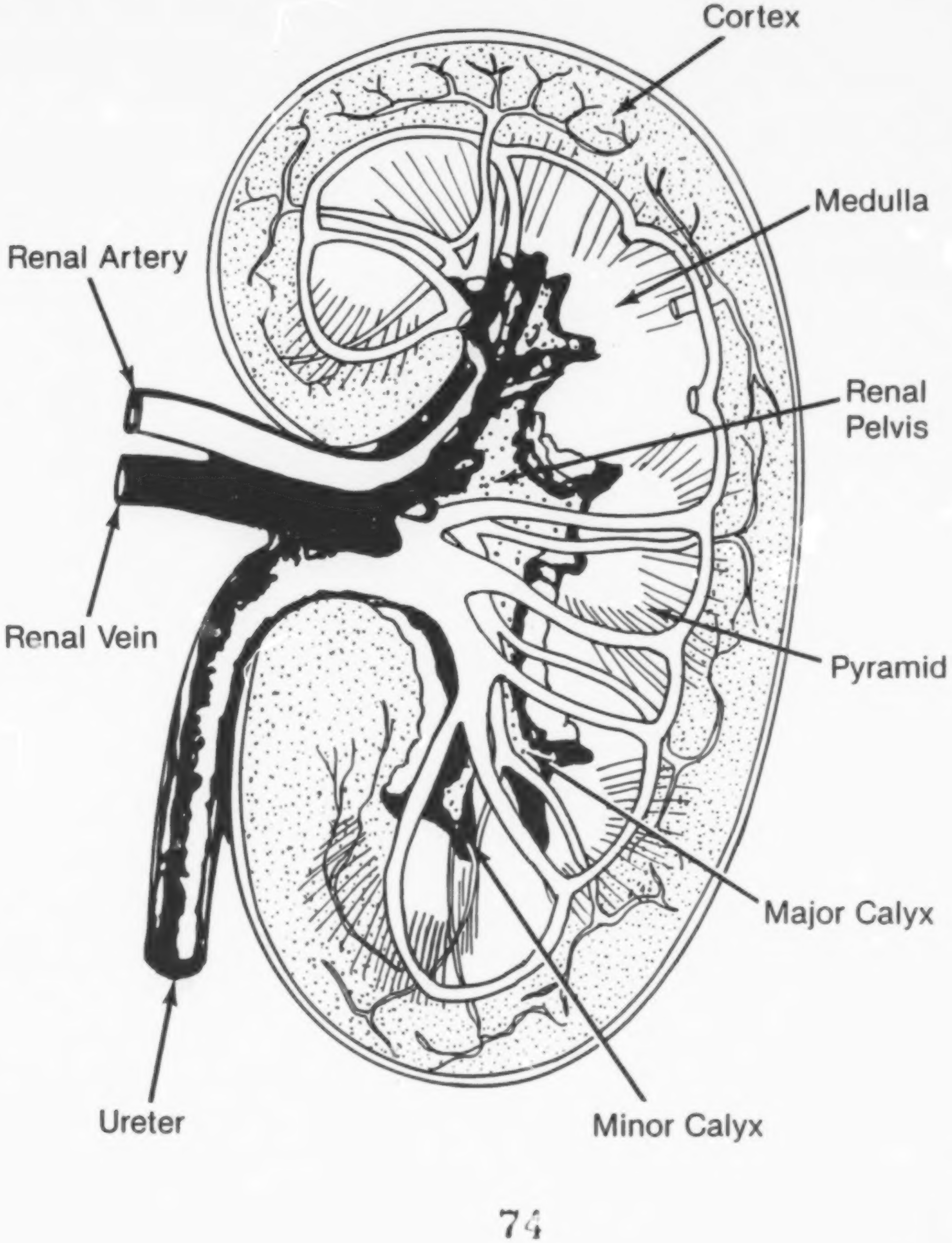

Fallopian Tubes
Ovaries
Uterus
Cervix
Urinary Bladder
Vagina
Pubic Bone
Urethra
Rectum
Urinary Meatus
Labia Minora
Labia Majora
Vaginal Orifice

The Urinary System with Blood Vessels

(Male)


Inferior Vena Cava
Hepatic Vein
Abdominal Aorta
Adrenal Gland
Kidney
Renal Artery
Renal Vein
Ureter
Common Iliac Vein
Common Iliac Artery
Internal Iliac Artery
External Iliac Artery
Urinary Bladder
Prostate Gland
Urethra

Vertical Section Through a Kidney


Cortex
Medulla
Renal Artery
Renal Pelvis
Renal Vein
Pyramid
Major Calyx
Ureter
Minor Calyx

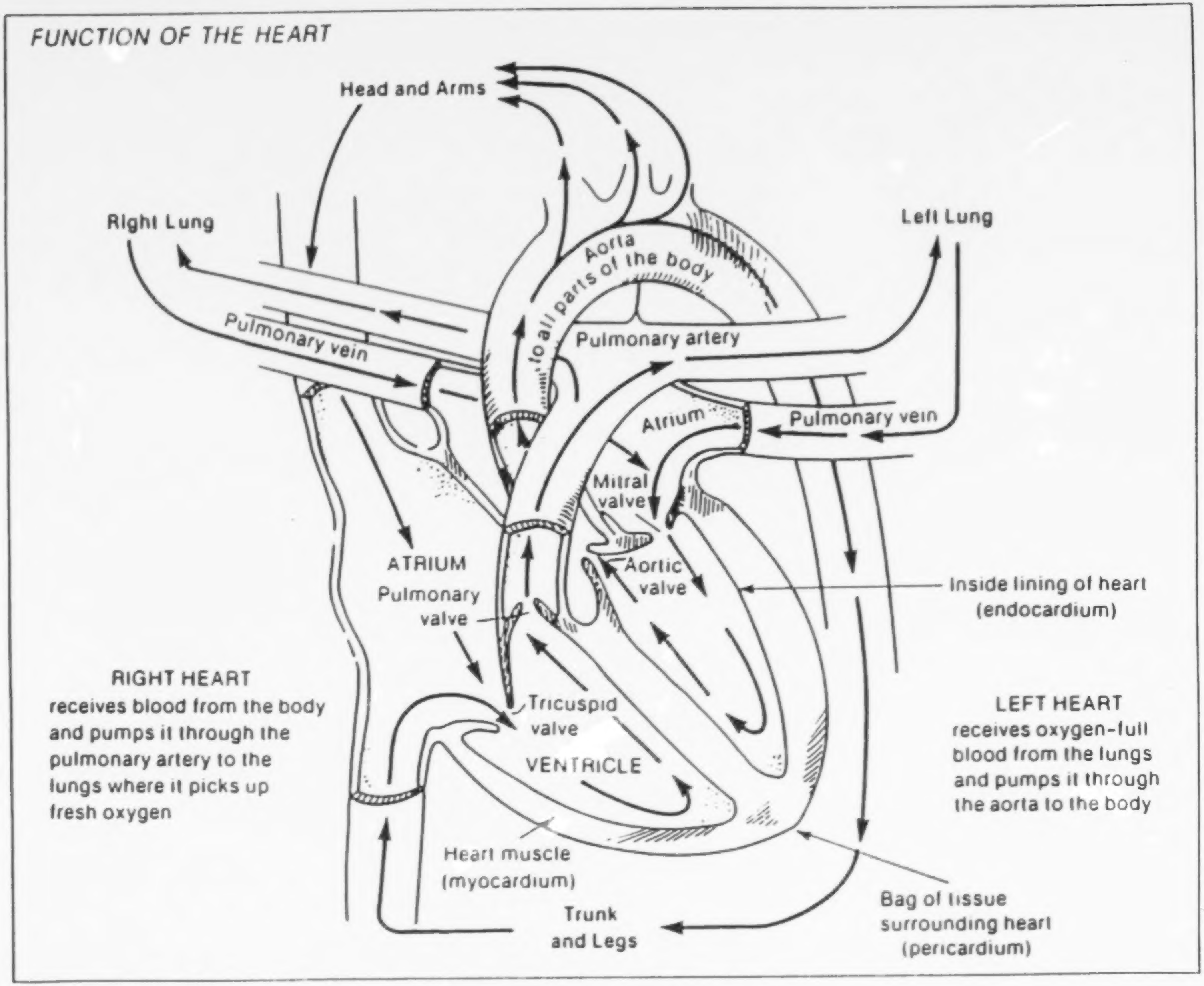

FUNCTION OF THE HEART
Head and Arms
Right Lung
Left Lung
Aorta
to all parts of the body
Pulmonary vein
Pulmonary artery
Atrium
Pulmonary vein
Mitral valve
Aortic valve
ATRIUM
Pulmonary valve
Inside lining of heart (endocardium)
RIGHT HEART
receives blood from the body and pumps it through the pulmonary artery to the lungs where it picks up fresh oxygen
Tricuspid valve
VENTRICLE
LEFT HEART
receives oxygen-full blood from the lungs and pumps it through the aorta to the body
Heart muscle (myocardium)
Trunk and Legs
Bag of tissue surrounding heart (pericardium)

Figure 6-1. Adapted by permission of the American Heart Association.

Lesson 3
Airway Obstruction and Respiratory Arrest

Introduction

All living cells of the body require oxygen to survive. For cells in the brain and nervous system, oxygen is particularly important; without oxygen, they may die in 4 to 6 minutes. It is the respiratory system that provides the means by which oxygen enters the body and carbon dioxide and other waste gases are removed. A non-breathing person or a person with breathing difficulties is a true emergency. Speedy recognition of the patient's problem and prompt and correct performance of the skills taught in this lesson may mean the difference between life and death to the patient.

Objectives

At the conclusion of Lesson #3, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Describe in narrative the significance of oxygen to body tissues, particularly the brain.
- List 5 components of the respiratory systems and the functions of each.
- List 3 signs of adequate air exchange.
- Demonstrate on a manikin, designed for CPR 5 airway management techniques.
- Demonstrate on a manikin, designed for CPR the AHA method of clearing an obstructed airway in the following situations:
    - Conscious adult
    - Adult who becomes unconscious
    - Unconscious adult
    - Conscious infant
    - Unconscious infant

Overview of Lesson Contents

The Respiratory System.

Anatomy and Physiology.

Pharynx. Air entering the nasopharynx or oropharynx or food entering the mouth passes to the pharynx.

Trachea. The trachea (in front) takes air to the lungs and is known as the windpipe.

Epiglottis. A valve called the epiglottis guards the opening of the trachea.

Larynx. The larynx is the first part of the trachea.

Bronchi. The trachea divides into two smaller tubes, the right and left bronchi, which enter the lungs.

Lungs. In the lungs, the bronchi branch into smaller parts until they finally end in millions of tiny air sacs, called alveoli.

Diaphragm. The diaphragm is a muscle that separates the chest cavity from the abdominal cavity and aids in breathing.

Pleura. The layer of slippery tissue covering the lungs is known as the pleura. A layer of this tissue also lines the chest cavity. In between is a thin layer of fluid.

Control of Breathing. Breathing is controlled by the brain.

Signs

Adequate Breathing. Chest and abdomen RISE and FALL as air is breathed in and out.

Inadequate Breathing

No air can be heard or felt at the nose and mouth,
The breathing is noisy,
The breathing is slow or
The patient is cyanotic.

Opening The Airway

Obstruction By The Tongue. In an unconscious patient, muscles relax and the tongue can fall back and obstruct the airway.

Techniques Of Care.

Head-Tilt Chin Lift Maneuver.

Head-Tilt Neck Lift Maneuver.

Coma Position.

Note: These techniques should not be used if a broken neck or upper spinal cord injury is suspected.

Need For Pulmonary Resuscitation. If breathing does not start spontaneously, artificial respiration should be started immediately.

Suspected Spine Injuries

Problem

A cervical spine injury must be suspected in all accident cases.

Hyperextension of the neck and any movement of the head must be avoided in order to prevent further injury to the spine.

Technique. Modified Jaw Thrust.

Pulmonary Resuscitation.

Oxygen In Inhaled And Expired Air.

The atmosphere contains about 21% oxygen.

Of the 21% inhaled, 5% is used by the body and the remainder (16%) is exhaled.

Mouth-To-Mouth Technique. Procedures are:

Establish unresponsiveness,

Open the airway,

Establish breathlessness,

Pinch the nose closed using thumb and index finger of hand

Open mouth widely, take a deep breath, make a tight seal around the patient's mouth, and blow air into the patient's mouth until the chest rises.

Remove the mouth to allow air to come out.

To start, give four breaths in rapid succession.

Ventilate the lungs 12 times per minute for an adult.

Mouth-To-Nose Technique.

May be needed because of severe injury in the mouth region.

The rescuer may not be able to make a tight seal because the patient has a large mouth, no teeth, etc.

Procedures are:

Establish unresponsiveness

Tilt the patient's head back.

Establish breathlessness

Use the other hand to lift the patient's lower jaw: this seals the lips.

Take a deep breath, seal the lips around the patient's nose and blow until the chest rises.

Remove mouth and let patient exhale.

If necessary, open patient's mouth during exhalation.

Give four deep and quick breaths to start and then repeat cycle every 5 seconds as with the mouth-to-mouth technique.

Variations For Infants. Procedures for infants and small children are:

Do not exaggerate the head tilt.

Make a seal around BOTH mouth AND nose.

Use less volume to inflate the lungs.

Inflate lungs once every 3 seconds.

Variations With Jaw Thrust Maneuver.

For mouth-to-mouth resuscitation, use the cheek to seal the nose.

For mouth-to-nose resuscitation, use the cheek to seal the mouth and do not retract the lower lips with the thumbs.

Gastric Distention. Artificial ventilation frequently causes distention of the stomach.

Slight distention should be ignored.

If there is marked distention causing ineffective air exchange, moderate pressure should be exerted by one hand between the navel and the rib cage after rolling the patient onto his side.

If the patient vomits, sweep or suction the mouth and continue.

The Laryngectomee. (Neck Breather)

The Condition. Some persons have all or part of their larynx removed through surgery.

These persons have a hole (known as a stoma) in the trachea through which they breathe.

Airway Care Procedures. Remove all coverings (e.g., scarves, ties, necklaces) from the stoma area.

Clear the stoma of foreign matter.

Make a seal with your mouth over the stoma and blow until the chest rises.

When the chest rises, remove your mouth from the stoma and permit the chest to fall.

Airway Obstruction

Importance Of Ventilating Lungs First. Efforts to ventilate the lungs will reveal whether foreign bodies are present.

Loose Material. Foreign material (blood, mucus, loose teeth, food, etc.) in the airway can prevent successful ventilation of the lungs. If attempts at ventilation are unsuccessful, the EMT-A should:

Turn the patient's head or entire body to one side.

Force the mouth open by the "cross finger" technique.

Sweep the index and middle fingers of the other hand across the back of the patient's throat.

Roll head back and attempt artificial ventilation.

Note: If a spine injury is suspected, the EMT should maintain the patient's head, neck and torso in strict alignment.

Lodged Material

If the patient is choking from a foreign object caught in his throat, emergency care procedures include back blows and manual thrusts.

BACK BLOWS. The EMT-A should deliver four sharp blows with the heel of the hand to the patient's spine between the shoulder blades.

NOTE: Infants and small children should be picked up, and inverted over the EMT's arm. The EMT should deliver light blows between the shoulder blades.

Abdominal Thrust Procedures. The EMT should:

Stand behind the patient.

Grasp one fist with the other hand and place the fist, thumbside, against the patient's abdomen, slightly above the navel and below the xiphoid.

Press the fist into the patient's abdomen with a quick inward and upward thrust.

Note: Do not use on infants.

Variation. The technique can be performed on a supine patient by placing one hand on the other, placing the heel of the bottom hand on the abdomen as above, and pressing into the abdomen with a sharp inward and upward thrust.

Chest Thrust. The chest thrust can be used when the patient is an infant, markedly obese or pregnant or if abdominal thrusts prove to be ineffective.

Procedure. The EMT should:

Stand behind a standing or seated patient.

Grasp one fist with the other hand and place the fist, thumbside, against the lower sternum above the xiphoid.

Press the fist into the patient's chest with a quick backward thrust.

Variation. For a supine patient, the EMT should:

Place the hands in the correct position for CPR and deliver compressions in the same manner.

Combined Procedures

Conscious Adult Procedures.

Identify complete obstruction.

Alternate 4 back blows and 4 manual thrusts until effective or patient loses consciousness.

Lesson 3

AIRWAY OBSTRUCTION AND RESPIRATORY ARREST

Upon completion of this lesson, you should be able to define these terms and use them correctly.

Airway

Artificial ventilation

Consicous

Foreign object

Respiratory distress or embarrassment

Resuscitation

Supine

Thrust

Unconscious

Ventilate

Victim

Volume

EXTERNAL CHEST PRESSURE PULMONARY RESUSCITATION FOR USE BY LARYNGECTOMEES

A laryngectomee, while in the company of other laryngectomees, may suffer an injury requiring pulmonary resuscitation. Since laryngectomees are unable to administer mouth-to-stoma breathing, their main course is the external chest pressure method herein described and illustrated.

METHOD Place the victim on a firm surface, flat on his back, face up (as illustrated in Figure #1).

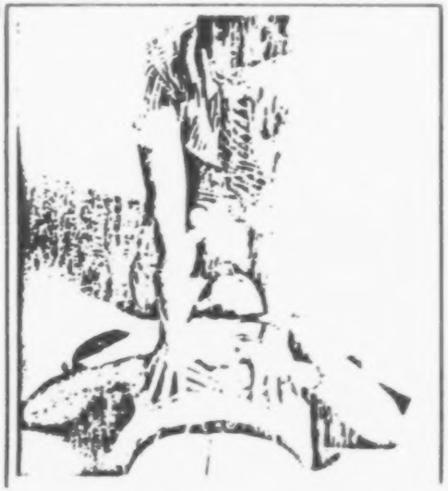
Place a blanket roll or any article of clothing under his shoulders. Position yourself in the kneeling position at his head. Grasp both his hands (palms down) lean forward with your arms straight and exert even, steady pressure downward on his lower ribs (see Figure #1). Lean back, raising the victim's arms upward and backward until they extend fully against your lower chest. (See Figure #3).

DO NOT WASTE TIME SECONDS COUNT.

Then lean forward and repeat the process, taking 4 or 5 seconds for the entire cycle (12 to 15 times per minute).

The stoma may need cleansing. Wipe it clean with a clean cloth or suck it away, if necessary.

1



Air supply to the lungs and adequate circulation are essential for life. Because the amount of air exchanged is far less than in mouth to neck breathing, the latter should be started as soon as a non-laryngectomee arrives.

2

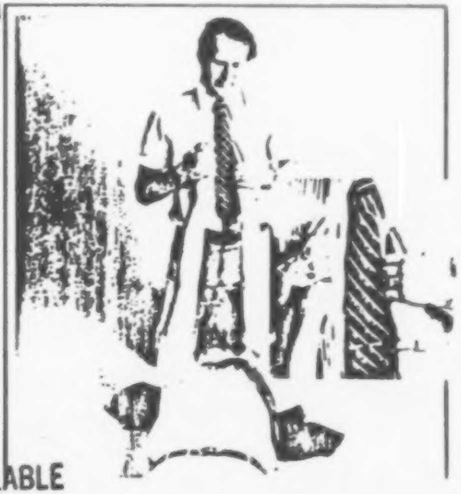
CAUTION!!! Resuscitation by external chest pressure is not a harmless procedure. If obvious crushing chest injury has occurred, this method should not be attempted. Here a bag-mask manual resuscitator is a life-saver (Figure #2.) When laryngectomees frequently travel together (unaccompanied by a normal breather), it is wise to carry a portable resuscitator.

SUMMARY:

1. Place victim on a firm surface, face up
2. Place blanket roll (or any clothing) under shoulders.
3. Position yourself in the kneeling position at victim's head (Figure #1).
4. Grasp victim's hands (palms down) and with your arms extended lean forward and exert body pressure on the lower rib cage.
5. Release, lift victim's hands to full extension against your chest, leaning backward (Figure #2).
6. Repeat the procedure every 4 to 5 seconds (12 to 15 times per minute).

DO NOT WASTE TIME SECONDS COUNT BE PROMPT

3



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from International Association of Laryngectomies

IDENTIFICATION: Check the Neck

Loosen all constrictive clothing. Bare the entire neck down to the sternum. To expose the neck opening, remove all coverings (such as bibs, metal screens and, in the case of women, necklaces, scarves, etc.)

Mouth-to-Neck Resuscitation to the *Total* Neck Breather:

With an unconscious victim in respiratory arrest (NOT BREATHING) or respiratory depression (INSUFFICIENT BREATHING) start MOUTH-TO-NECK breathing immediately. *(See Figs. 6, 7)*

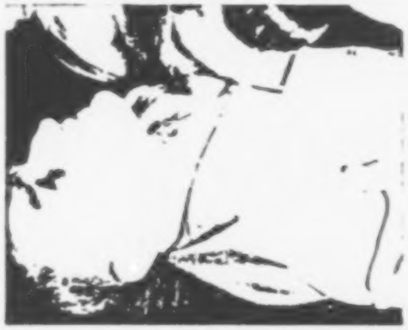

Fig. 6

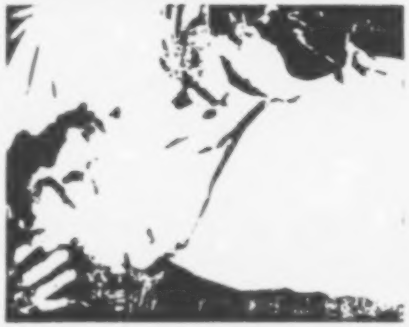

Fig. 7

Do Not Waste Time—*Seconds Count* Keep victim on his back, head straight, chin up. Place a blanket or any article of clothing under the shoulders and concentrate your attention on that "hole in the neck."

Start Mouth-to-Neck Breathing Promptly. *Seconds Count* Position yourself to either side of the victim. Place your mouth and lips tightly over the neck opening, or around the tracheal tube if the victim is wearing one. DO NOT REMOVE THE TUBE. If there is blockage or obstruction in the opening, wipe it away or suck it away. Use a clean cloth or handkerchief—NEVER TISSUE. If a suction apparatus with a soft rubber tube (or catheter) is handy, insert it 3 to 5 inches into the neck opening for a few seconds. *(See Figures 8 and 9)*

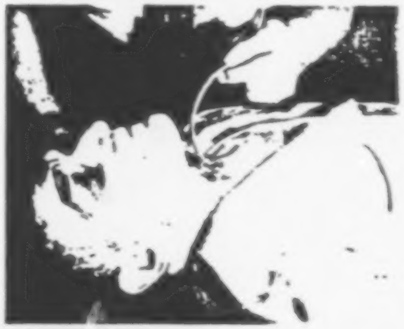

Fig. 8

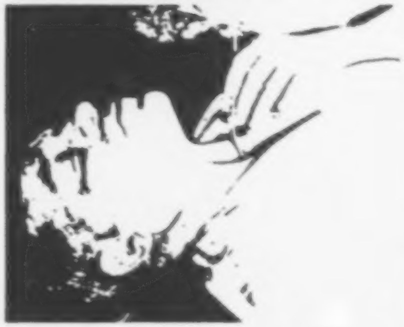

Fig. 9

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Lesson 4
Cardiac Arrest

Introduction

The circulatory system provides the means by which oxygen and other nutrients are distributed to body cells and carbon dioxide and other waste products are removed. As with the previous lesson, cardiac arrest represents a true emergency. Speed in the recognition of the patient's problem and prompt and correct performance of the skills taught in the lesson may mean the difference between life and death to the patient.

Patient Becomes Unconscious.

Place patient supine.
Call for help.
Open airway: attempt ventilation; if unsuccessful:
Activate EMS system.
Give 4 back blows.
Perform 4 manual thrusts.
Check for foreign body-and sweep with finger.
Attempt ventilation and repeat as necessary.

Patient Found Unconscious.

Establish unresponsiveness.
Call for help.
Open airway; establish breathlessness.
Attempt to ventilate.
If unsuccessful, reposition head and try again.
Activate EMS system.
Give 4 back blows.
Perform 4 manual thrusts.
Check for foreign body and sweep.
Attempt ventilation and repeat as necessary.

Study Suggestions

1. Describe how you would check a patient for signs of adequate breathing.
2. Describe how you would resuscitate a patient with a badly swollen tongue.
3. Describe what you might suspect if a patient's chest appears to be moving normally but no exhaled air can be felt at nose and mouth.
4. Practice the five techniques of opening the airway. Use a classmate or friend as a "patient".
5. Practice opening your own mouth using the cross-finger technique.
6. Practice correct positioning of your hands and body for performance of the abdominal and chest thrusts on a standing/seated and supine patient. Use a classmate or friend as a "patient". Do NOT perform the actual thrusts.
7. Practice THE STEPS involved in dislodging a foreign object in the airway for conscious and unconscious patients. Use a classmate or friend as a "patient". Simulate procedures; DO NOT perform actual maneuvers.
8. If an adult manikin is available, practice mouth-to-mouth and mouth-to-nose pulmonary resuscitation. If a manikin is not available, simulate performance of the skills on a classmate or friend as follows:

   Establish unresponsiveness.
   Properly position your hands and fingers on the "patient."
   Open your mouth an appropriate amount and start the ventilation process by delivering INTO THE AIR the proper number of breaths at the proper volume.
   Maintain ventilation at the proper rate and volume. Have the "patient" time your ventilations.

9. When an infant manikin is available, practice the steps involved in pulmonary resuscitation.

10. Practice sealing the nose and mouth of a partial neck breather. Use a classmate or friend as a "patient".

Objectives

At the conclusion of Lesson #4, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List 4 components of the circulatory system and the function of each
- List 2 specific signs of cardiac arrest.
- List 3 possible complications of CPR.
- List 3 instances when CPR, once initiated, may be terminated.
- Demonstrate on a manikin, the current AHA sequences and techniques for the following CPR cases:
  - —single rescuer (adult and infant)
  - —team rescuer (adult)
  - —infant and adult CPR while transferring to an ambulance

Overview of Lesson Contents

The **Circulatory System** consists of the heart and a series of tubes that carry blood throughout the body.

The tubes include:

Arteries that carry blood rich in oxygen.

Veins that carry deoxygenated blood and waste products.

Capillaries through which oxygenated and deoxygenated blood are exchanged with the body cells.

In combination with the respiratory system, the circulatory system serves to provide the body with the oxygen needed for life.

The Heart

Design Of The Heart. The heart is a muscular organ approximately the size of a man's clenched fist.

A wall (septum) divides the heart into two upper chambers (atria) and two lower chambers (ventricles).

The Heart As A Two-Sided Pump

The left side of the heart receives oxygenated blood from the lungs and pumps it out to all body parts through a system of arteries.

The right side of the heart receives from the veins blood that has circulated through the body and pumps it to the lungs to be re-oxygenated.

A system of one-way valves keeps blood moving in the proper direction and prevents backflow of the blood

The heart is located in the chest cavity under the sternum and the lungs. Pressure on the sternum will compress the heart and produce an artificial circulation.

The liver and spleen are located below the heart—the liver to the right and center and the spleen to the left.

Laceration of the lungs, liver or spleen could prove fatal to the patient. It is therefore especially critical that the skill learned in this lesson be learned correctly.

Signs Of Cardiac Arrest

The patient is not breathing.

The patient has no carotid pulse.

Technique Of Cardiopulmonary Resuscitation.

General Procedures.

Place patient on a firm surface, such as the ground or a spine board: CPR cannot be performed with the patient in a sitting position.

Adequately ventilate the lungs with oxygen since compression without ventilation is useless.

Locate the hands on the lower half of the sternum avoiding the xiphoid process. Use sternal notch to locate position.

Place the heel of one hand on top of the other, with fingers raised so that no contact is made with the ribs.

Lean over the patient with elbows straight so that the weight of your body is assisting in compression of the sternum.

For an adult, compress the sternum about 1½ to 2 inches vertically downward. Compressions should be 50% compression 50% relaxation.

Compress the sternum approximately 80 times per minute for single rescuer and 60 times per minute for team rescuer.

One-Rescuer Technique

Establish unresponsiveness.

Call for help.

Assure an open airway.

Establish **BREATHLESSNESS.** Look, listen and feel.

Ventilate the lungs quickly 4 times.

Check Carotid pulse.

Activate EMS system.

Perform 15 compressions with 2 quick and full ventilations.

Stop compression and give 2 quick full ventilations.

Alternate 15 compressions with 2 quick and full ventilations.

Recheck Pulse after 1 minute.

Two-Rescuer Technique.

Establish Unresponsiveness.

Call for help.

Ventilator assures an open airway.

Establish Breathlessness.

Ventilator ventilates the lungs quickly 4 times.

Check carotid pulse.

Second rescuer performs 5 compressions of the sternum at the rate of 60 per minute. Counting "One-One-thousand", "Two-One thousand", "Three-One thousand", etc., will aid the rescuer in maintaining a rate of one compression per second.

Ventilator interposes one breath after each 5 compressions.

Changing Positions. Compressor calls for a switch when needed. Ventilator gives breath on 5th count and moves to chest. Compressor checks pulse, ventilates and signals to begin.

Infants And Children

For small children 1 to 8 years, only the heel of one hand is used and the compression should be 1 to 1½ inches, 80 per minute.

For infants, less than 1 year, only the tips of the index and middle fingers are used and the compression should be one-half to 1 inch. 100 per minute. Use brachial pulse check.

Pressure should be exerted over the mid-sternum.

Additional support beneath the back will be required for infants and small children.

Second Rescuer Entering.

Single rescuer CPR initiated.

The Second rescuer appears and identifies self.

Second rescuer checks pulse for effective compressions.

Second rescuer calls for stop to check for spontaneous return of pulse.

Begins two rescuer CPR.

Signs Of Effective CPR

A carotid pulse can be felt (when working as a team, the ventilator should feel a pulse with each compression).

The pupils constrict when exposed to light.

The skin color improves.

There may be spontaneous gasping respirations.

There may be spontaneous movement of the patient's arms or legs.

The heart may resume normal beating.

Note: CPR produces a pumping activity that is only 25% to 33% as effective as the action of a normal heart. Thus oxygen should be delivered to all patients who have sustained a cardiac arrest as soon as it is available.

CPR should not be interrupted for more than 5 seconds unless it is necessary to move a patient up and down a stairway. Such interruptions should not exceed 15 seconds.

Complications:

Fractured ribs.

Fractured sternum.

Lacerations of the liver, spleen, lungs or heart.

Damage to the pleura resulting from broken ribs.

Beginning And Terminating CPR

CPR is not indicated for a patient known to be in the terminal stages of an incurable condition, if signed physician orders are present.

Once started, CPR should be terminated only when one of the following occurs:

The patient's heart resumes normal beating.

A physician or other properly trained person responsible for emergency medical services assumes responsibility for the patient.

The rescuer is exhausted and unable to continue.

The patient is pronounced dead by a physician, coroner or other individual with the legal authority to do so.

Study Suggestions

1. Describe how you would check a patient for cardiac arrest.
2. Explain what you could do if you saw a rescuer attempt to perform CPR with his hands placed over the xiphoid process. Give the reasons for your actions.
3. You have started cardiopulmonary resuscitation and suddenly suspect that the patient has a broken rib on his right side near the sternum. Explain what you would do and why.
4. When an adult manikin is available, practice one-man cardiopulmonary resuscitation.
5. When an adult manikin is available, practice the steps involved in two-man cardiopulmonary resuscitation with a classmate.
6. When an infant manikin is available, practice the steps involved in cardiopulmonary resuscitation of an infant.

Lesson 4

CARDIAC ARREST

Upon completion of this lesson, you should be able to define these terms and use them correctly.

Biological death

Clinical death

Contraction

Contusion

Embolus

Hemothorax

Myocardial infarction

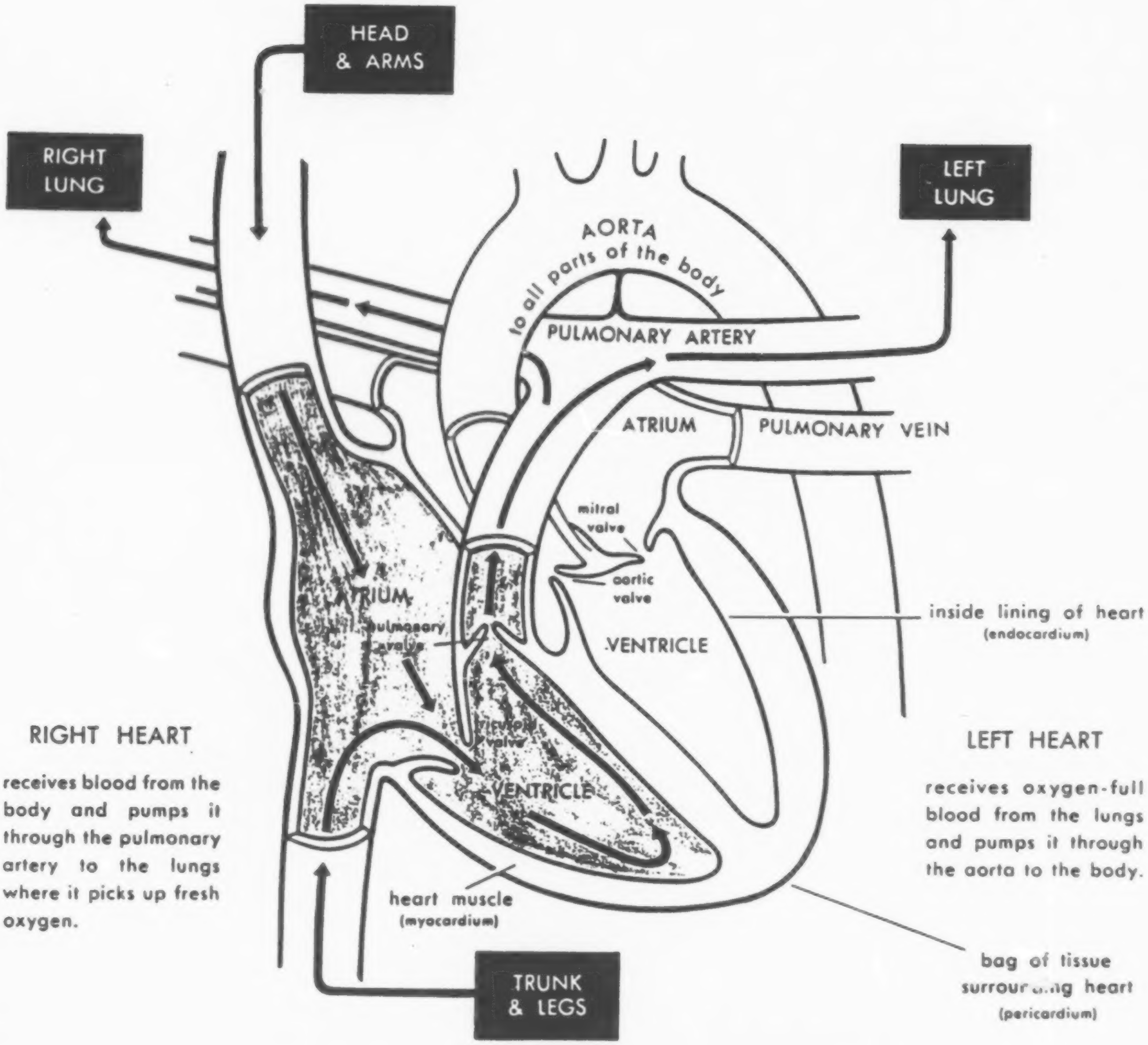
Myocardium

Palpitation

Pneumothorax

Sternum

YOUR HEART AND HOW IT WORKS


HEAD & ARMS
RIGHT LUNG
LEFT LUNG
AORTA
to all parts of the body
PULMONARY ARTERY
ATRIUM
PULMONARY VEIN
mitral valve
aortic valve
ATRIUM
pulmonary valve
VENTRICLE
inside lining of heart (endocardium)
tricuspid valve
VENTRICLE
heart muscle (myocardium)
TRUNK & LEGS
bag of tissue surrounding heart (pericardium)

RIGHT HEART

receives blood from the body and pumps it through the pulmonary artery to the lungs where it picks up fresh oxygen.

LEFT HEART

receives oxygen-full blood from the lungs and pumps it through the aorta to the body.

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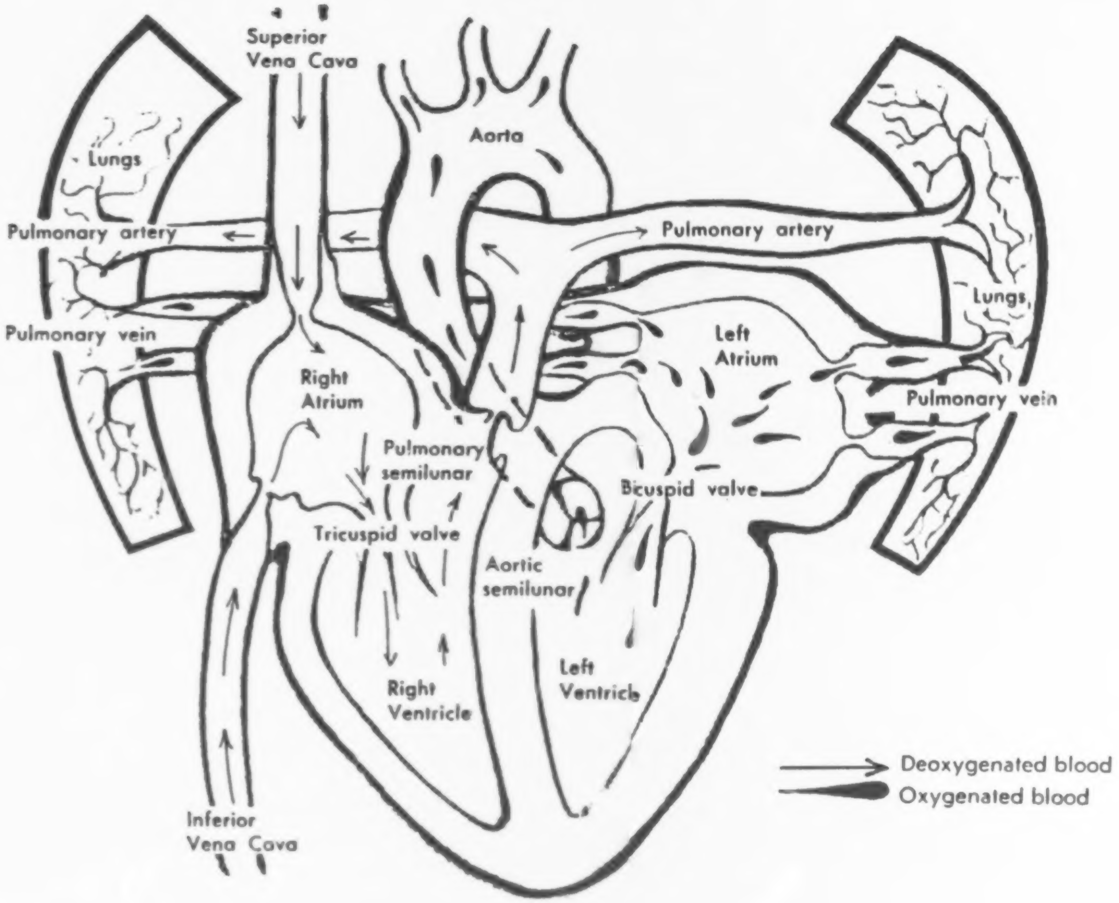

Superior Vena Cava
Aorta
Lungs
Pulmonary artery
Pulmonary artery
Pulmonary vein
Lungs
Left Atrium
Right Atrium
Pulmonary vein
Pulmonary semilunar
Bicuspid valve
Tricuspid valve
Aortic semilunar
Left Ventricle
Right Ventricle
Deoxygenated blood
Oxygenated blood
Inferior Vena Cava

HEART

Plan of Blood Circulation Through the Heart

SVC IVC → **R.A.** → Tricuspid valve → **R.V.** → Pulmonary semilunar valve → Pulmonary artery → Capillaries in lungs → Pulmonary veins → **L.A.** → Bicuspid (mitral) valve → **L.V.** → Aortic semilunar valve → **Aorta**

Lesson 5
Manikin Practice and Certification

Introduction

As mentioned previously the absence of breathing or circulation will lead to the death of the patient. Prompt and efficient intervention must be completed by the EMT-A.

Objectives

At the conclusion of Lesson #5, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Certify to current AHA standards in all areas required of a CPR-Basic Rescuer.

Overview Of Lesson Contents

Basic rescuer certification including:

Written exam
One rescuer CPR
Two rescuer CPR
Infant CPR
Adult obstructed airway procedures
Infant obstructed airway procedures.

Study Suggestions

1. Review all material covered in lessons 3 and 4.
2. Review American Heart Association performance standards.
3. Practice all procedures on appropriate manikins until proficiency is attained.
4. List the proper performance sequences for each skill.

Lesson 6
Practical Use of Airway Adjuncts

Introduction

A patient can be given basic life support without the use of mechanical aids. In many cases, however, airway adjuncts make airway care and ventilating easier and more effective. If oxygen is required, such aids are a necessity. EMT's must be thoroughly knowledgeable about the design and use of the equipment available to them.

Objectives

At the conclusion of Lesson #6, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—List the indications, purpose and functions of the following airways:

- Oropharyngeal airways
- Nasopharyngeal airways
- Portable suction
- Oxygen equipment and delivery systems: nasal cannula, simple face mask, venturi mask, etc.
- Pocket valve mask
- Bag valve mask

—Demonstrate on manikin the correct sequence and techniques for using the following airway adjuncts in stationary and moving patient circumstances:

- Oropharyngeal airways
- Nasopharyngeal airways
- Portable suction
- Oxygen equipment and delivery systems: nasal cannula, simple face mask, venturi mask, etc.
- Pocket mask system
- Bag valve mask system.

Overview Of Lesson Contents

Oropharyngeal Airways

Oropharyngeal airways can be used in sizes to maintain an open airway on unresponsive patients.

Procedures of inserting the airway are as follows:

- Select proper size: corner of mouth to earlobe.
- Open the patient's mouth using the cross-finger technique.
- Insert airway with the tip facing upward (toward the roof of the patient's mouth).
- After contact with soft palate, rotate it 180 degrees and insert it until the flange rests on the lips or teeth (the curve of the airway follows the patient's tongue.)

Nasopharyngeal Airways.

A nasopharyngeal airway is not likely to stimulate vomiting and nasopharyngeal may be used on a conscious patient who cannot maintain an open airway.

Select the proper size measured from the nose to earlobe.

Lubricate the airway.

Insert it through a nostril following the floor of the nose until the flagne rests against the nostril.

Suction Unit

A suction unit permits removal of blood and other liquid materials from the airway.

Procedures for use are:

- Inspect unit to insure that all parts are assembled.
- Switch on suction, clamp tubing and assure that pressure dial registers over 300 mm Hg.
- Attach flexible catheter or rigid tonsil sucker.
- Open the mouth with the cross-finger technique.

Insert the catheter into the pharynx. Length of insertion is the distance from mouth to lobe of ear. Insert rigid tonsil sucker with convex side along the roof of the mouth until the pharynx is reached.

Apply suctioning only after catheter is in position.

Suctioning should not exceed 15 seconds.

Oxygen

Patients Needing Oxygen Include:

PATIENTS SUFFERING A CARDIAC ARREST and others whose condition results in a lack of oxygen being delivered to the organs.

Dangers Of Oxygen Use:

Oxygen supports combustion.

In some chronic diseases states like emphysema, administration of oxygen can decrease respiration since, in these patients, a low blood oxygen level is the stimulus for respiration. Avoid cylinder or regulator contact with petroleum products.

Oxygen Equipment

Oxygen is usually supplied as a compressed gas in seamless steel or alloy cylinders.

Thus the cylinders are designed so that an oxygen line or regulator cannot mistakenly be attached to a cylinder of another compressed gas.

Pressurized cylinders must be handled carefully since their contents are under pressure.

Pressure of a full oxygen cylinder will be 2000 to 2200 psi; it must be reduced to 40 to 70 psi before administration to a patient.

Flowmeters are typically permanently attached to the pressure regulator; they permit oxygen to be delivered to the patient at the desired rate.

Since oxygen in a compressed cylinder is an extremely dry gas, a humidifier should be attached to the flowmeter to prevent excessive dryness of the patient's mucous membranes if prolonged administration of oxygen is anticipated.

Operating Procedures. The EMT should:

Remove protective cap.

"Crack" the valve.

Attach regulator-flowmeter.

Attach humidifier.

Reduce the pressure.

Regulate the flow.

Connect administering apparatus.

Shut down the apparatus.

Equipment For Oxygen Delivery

Methods of oxygen delivery include:

Nasal Cannula. **Mask and Bag.**

Facemask. **Venturi Masks.**

Each type of delivery device has specific advantages and limitations.

Equipment For Ventilation And Oxygen Delivery

Pocket-Mask With Oxygen Inlet Valve System is a ventilation system which permits additional oxygen to be delivered to the non-breathing patient.

It will deliver 50% oxygen at ten liters per minute.

Procedures for use:

Stand behind patient's head and open airway with modified jaw thrust, use oropharyngeal airway.

Attach oxygen.

Apply the mask to the face with the apex over the bridge of the nose and the base between the lips and chin.

Place your thumbs on dome of mask and hold patient's mandible with remaining fingers.

Maintain an airtight seal with firm pressure between thumb and fingers.

Maintain an open airway by modified jaw thrust.

Breathe through open port in chimney.

Remove mouth and allow patient to exhale passively.

Note: Adult mask may be inverted for use on a child. Infant size mask can be used on the stoma.

Bag-Valve-Mask Resuscitator system, when used with a reservoir permits delivery of high concentrations of oxygen to the patient.

It should be used with an oropharyngeal airway in place.

Procedures for use:

Select correct mask size.

Inflate collar if necessary.

Open airway with cross-finger technique and insert oropharyngeal airway.

Apply mask over the patient's face with its apex over the bridge of the nose and its base between the lower lip and chin.

Hold the mask firmly in position by placing three fingers of one hand on the mandible between the angle and the lobe of the ear while the index finger is held over the lower portion of the mask and the thumb over the upper portion of the mask.

With the other hand, compress the bag fully in a rhythmical manner once every five seconds.

Comments On Use.

Better volumes for ventilation can be delivered by direct mouth-to-mouth resuscitation but supplemental oxygen cannot be provided.

Inadequate tidal volume may be the result of improper seal or incomplete bag compression.

If chest does not rise and color improve in a non-breathing patient, select an alternate method.

Demand-Valve Resuscitator system can be used to assist ventilation or control it.

It can deliver 100% oxygen.

Procedures for use:

Preset pressure initially at 10 to 20 cm H20 or 8 to 15 mm Hg.

Ventilate patient by periodically depressing valve button.

Study Suggestions

1. Simulate and describe aloud the steps involved in using each piece of equipment covered in the lesson.
2. Describe under what conditions (medical or otherwise) you would use each piece of equipment covered in the lesson.

Terminology List for Lesson 6

At the completion of this lesson, you should be able to define and use the following term correctly.

Catheters

Gag reflex

Hypoxia

Intubation

Laryngectomy

Liter

Oropharyngeal area

Stoma

Suction

Lesson 7
Bleeding and Shock

Introduction

This lesson covers two additional life-threatening emergencies—bleeding and shock. Proper emergency care for these conditions can mean the difference between life and death for the patient.

Objectives

At the conclusion of Lesson #7, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List 4 methods of controlling bleeding.
- Demonstrate control of external bleeding by use of direct pressure, elevation and pressure points.
- Describe when and how to use a tourniquet.
- List 4 signs of internal bleeding.
- List 6 types of shock.
- List 6 signs and/or symptoms of shock.
- Demonstrate and describe 5 steps in the treatment and prevention of shock.
- Perform a primary survey.
- Perform a secondary survey.
- Obtain and record a blood pressure by both auscultation and palpation.

Overview Of Lesson Contents

Mechanics Of Circulation

Review Of System Elements And Functions.

Heart. **Capillaries.**
Arteries. **Veins.**

Each time the heart pumps, a pulse can be felt throughout the arterial system. It can most easily be felt where a large artery is close to the skin surface, that is:

a. The radial pulse.
b. The carotid pulse.
c. The femoral pulse.
d. The brachial pulse (infants).

Blood is a red, sticky fluid that travels through the circulatory system. The average adult has six liters of blood.

Blood carries oxygen to body tissues and removes waste products.

It carries cells that combat infection in the body.

It has a capability of clotting; clotting normally takes 6 to 7 minutes.

The term perfusion means the circulation of blood within an organ. An organ is perfused if blood is entering it through the arteries and leaving through the veins.

Perfusion keeps the body cells healthy by providing them with oxygen and other nutrients and removing waste products.

Blood pressure is the pressure that the blood exerts against the walls of the arteries as it passes through them. This pressure causes the flow of blood.

The pressure wave has high and low points, called systolic pressure and diastolic pressure.

In normal males, systolic pressure varies from 100 mm Hg plus the age of the patient up to 140 mm Hg; diastolic pressure, from 65 to 90 mm Hg. In females, the pressure may be 8 to 10 mm Hg lower.

It is important for a physician to know the patient's blood pressure as soon as possible after an emergency event in order for him to evaluate the significance of any change in blood pressure measured at the hospital.

Blood pressure is measured with a sphygmomanometer. Procedures are:

Fasten cuff of sphygmomanometer about either arm above the elbow and inflate with the rubber bulb until the mercury column or the needle of the dial stops moving with the pulse (usually between 150 and 200 mm Hg).

Ausculatory method.

Place the stethoscope diaphragm or bell over the brachial artery, earpieces should point forward.

Release air slowly from the bulb and observe the mercury column fall or aneroid dial return to zero.

Record as the systolic pressure the point on the gauge at which the sound of the pulse is first heard.

Record as the diastolic pressure the level on the gauge at which the sounds disappear.

Palpation method.

Release air slowly from the bulb and observe the mercury.

Record the systolic pressure when the pulse is first felt in brachial or radial artery.

Shock is the failure of the circulatory system to provide sufficient oxygenated red cells and perfuse cellular tissue.

Shock is caused by:

Failure of the heart to pump sufficient blood.

Severe blood or fluid loss so that there is insufficient blood for the heart to pump through the system.

Enlargement of blood vessels so that there is insufficient blood to fill them.

Breathing problems resulting in insufficient oxygen traveling through the system.

Types Of Shock

- **Hypovolemic Shock (Blood Loss)**
- **Respiratory Shock (Inadequate Breathing)**
- **Neurogenic Shock (Loss of Vascular Control By The Nervous System)**
- **Psychogenic Shock (Fainting)**
- **Cardiogenic Shock (Inadequate Functioning Of The Heart)**
- **Septic Shock (Severe Infection)**
- **Anaphylactic Shock (Allergic Reaction)**
- **Metabolic Shock (Bodily Loss Of Fluid)**

Signs And Symptoms Of Shock Include:

Restlessness and anxiety (these signs may precede all others).

Weak and rapid (thready) pulse.

Cold and clammy skin.

Diaphoresis.

Pale or mottled face.

Breathing shallow, labored, rapid, possible irregular or gasping.

Eyes dull or lusterless with dilated pupils.

Marked thirst.

Possible nausea or vomiting.

Gradual and steady drop in blood pressure.

Possible fainting in cases of rapidly developing transient shock.

Decreased capillary refill.

Signs And Symptoms Of Anaphylactic Shock

The skin may burn, flush, itch or break out. The face and tongue may swell. Cyanosis may be visible around the lips.

Breathing is difficult. There is a tightness or pain in the chest and persistent coughing.

Blood pressure drops and the pulse becomes weak or imperceptible.

Faintness and coma may ensue.

Emergency Care

Certain principles of initial treatment may be applied to all patients in shock:

Secure a clear airway and administer a high percent of oxygen.

Control bleeding.

Elevate lower extremities if injuries to them do not make this inadvisable.

Splint fractures.

Avoid rough handling.

Prevent LOSS of body heat.

Keep the patient supine unless he is personally more comfortable in another position.

Record blood pressure, pulse and other vital signs at 5-minute intervals.

Do not feed the patient or give him anything to drink.

Note: The basic care for shock is to care for the whole patient to **Prevent** shock.

Note: The only definitive treatment for anaphylactic shock is an injection to combat the agent causing the reaction. The patient may be stabilized with high percent of oxygen. The patient needs prompt transportation to a medical facility. The EMT may ASSIST an individual in administering medication (epinephrine) if allowed by State and local protocol.

External Bleeding

The loss of 1 liter of blood in an adult is serious and of 500 ml (½ liter) of blood in a child and 20% of blood volume in an infant is serious.

If uncontrolled, bleeding can result in shock and death.

Types

Bleeding from an artery spurts and is bright red in color because it is rich in oxygen.

Bleeding from a vein is steady and is dark bluish-red in color.

Blood oozes from a capillary and is similar in color to venous blood.

Procedures For The Control Of Bleeding

Direct Pressure

Direct pressure with the hand over the wound using a universal dressing or gauze pad will stop most bleeding.

The dressing should be held in place with a bandage.

If the bleeding does not stop, additional pressure should be applied with the hand.

Elevation may help control bleeding of an extremity.

Large wounds may require packing with gauze.

Pressure Points. If pressure dressings are not available, pressure points may be used to control severe bleeding in the arm or leg.

The brachial artery is pressed against the bone to stop bleeding below the pressure point.

The femoral artery is pressed against the pelvis to stop bleeding in the leg.

Tourniquet: A Tourniquet is used in a severe emergency when other means will not stop bleeding.

Tourniquets can damage nerves and blood vessels and result in the loss of an arm or leg.

Splints: When a fracture is present, much damage is caused to tissues by broken bones.

Pressure splints and pneumatic counter pressure devices can aid markedly in controlling severe hemorrhage when massive lacerations of muscle and tissue and multiple fractures have occurred.

Pneumatic counter pressure devices can also aid in shock control.

Nosebleeds (epistaxis): can be serious enough to cause shock from blood loss.

Causes may include:

Fractured skull.

Facial injuries.

Sinusitis, infections, abnormalities of the inside of the nose.

High blood pressure.

Bleeding diseases.

Emergency Care procedures are:

Pinch the nostrils or place a bandage between the upper lip and the gum and press.

Keep patient in sitting position.

Keep patient quiet.

If available, apply ice over the nose.

Note: Bleeding from the nose or ears may mean there is a skull fracture. This type of bleeding should not be stopped.

Internal Bleeding

Internal bleeding can result in severe blood loss and the patient may die of shock.

A fractured shaft of the femur can result in an internal loss of 1 liter of blood.

Laceration of the liver can result in severe blood loss and be quickly fatal.

Signs

The signs of internal bleeding are those of hypovolemic shock.

In addition, the patient may cough up or vomit bright red blood, vomit dark blood (the color of coffee grounds), pass dark stools, pass bright red blood, or have a tender, rigid abdomen that enlarges.

The patient suffering from severe internal bleeding is a serious condition and the rescuer can do very little for him at the accident scene.

If bleeding is suspected in an extremity, it may be controlled by a pressure dressing or by application of a splint.

Fast but safe transportation to a hospital is a must.

High percent of oxygen should be administered.

Military Anti-Shock Trousers (MAST) or Pneumatic Counter Pressure Devices (PCPD) may be useful.

Review Of Primary Patient Survey

The procedures for the life-threatening survey are accomplished simultaneously, not sequentially. For example, the rescuer does not check for breathing first when he notices blood severely gushing from a wound. The EMT-A will feel, talk and observe.

Note: The EMT-A should always check for medical identification symbols.

Procedures:

Level of consciousness

Establish responsiveness

Determine orientation

Check pupils.

Respirations

Observe chest and feel for exhaled air at mouth and nose.

Assess rate, quantity, quality.

Don't forget the special case of the laryngectomee.

Pulse

Establish existence

Assess rate and quality

Bleeding/Shock

Observe for life-threatening external bleeding.

Observe for indications of internal bleeding.

Note: If there are multiple casualties, check each patient, stopping only to administer to those with life-threatening problems. The EMT-A should always check for medical identification symbols.

Study Suggestions

1. Simulate and describe aloud the steps involved in taking blood pressure. When a sphygmomanometer and stethoscope are available, take as many blood pressure measurements on your friends as you can.
2. Practice taking the pulse at the carotid, radial and femoral arteries. Practice on yourself and as many friends as you can.
3. The patient's upper leg is crushed and blood is spurting from the femoral artery. Describe what you might do for the patient and why.
4. The patient has sustained a severe blow to the head. He is barely conscious and is bleeding from the nose and ears. Describe how you would care for this patient and why.
5. The patient has several external bruises, has vomited dark red blood and appears to be going into shock. Describe what might be wrong with the patient and what you might do for him.
6. Perform as many examinations for life-threatening problems as you can. Use classmates or friends as "patients". As you perform the examinations, explain aloud what you are doing and implications of what you find. Simulate any actions you would take.

Terminology List for Lesson 7

BLEEDING

At the completion of this lesson, you should be able to define and use the following terms correctly.

Aspiration

Blood volume

Closed wound

Clothing

Cryotherapy

Ecchymosis

Epistaxis

Hemorrhage

Hypovolemia

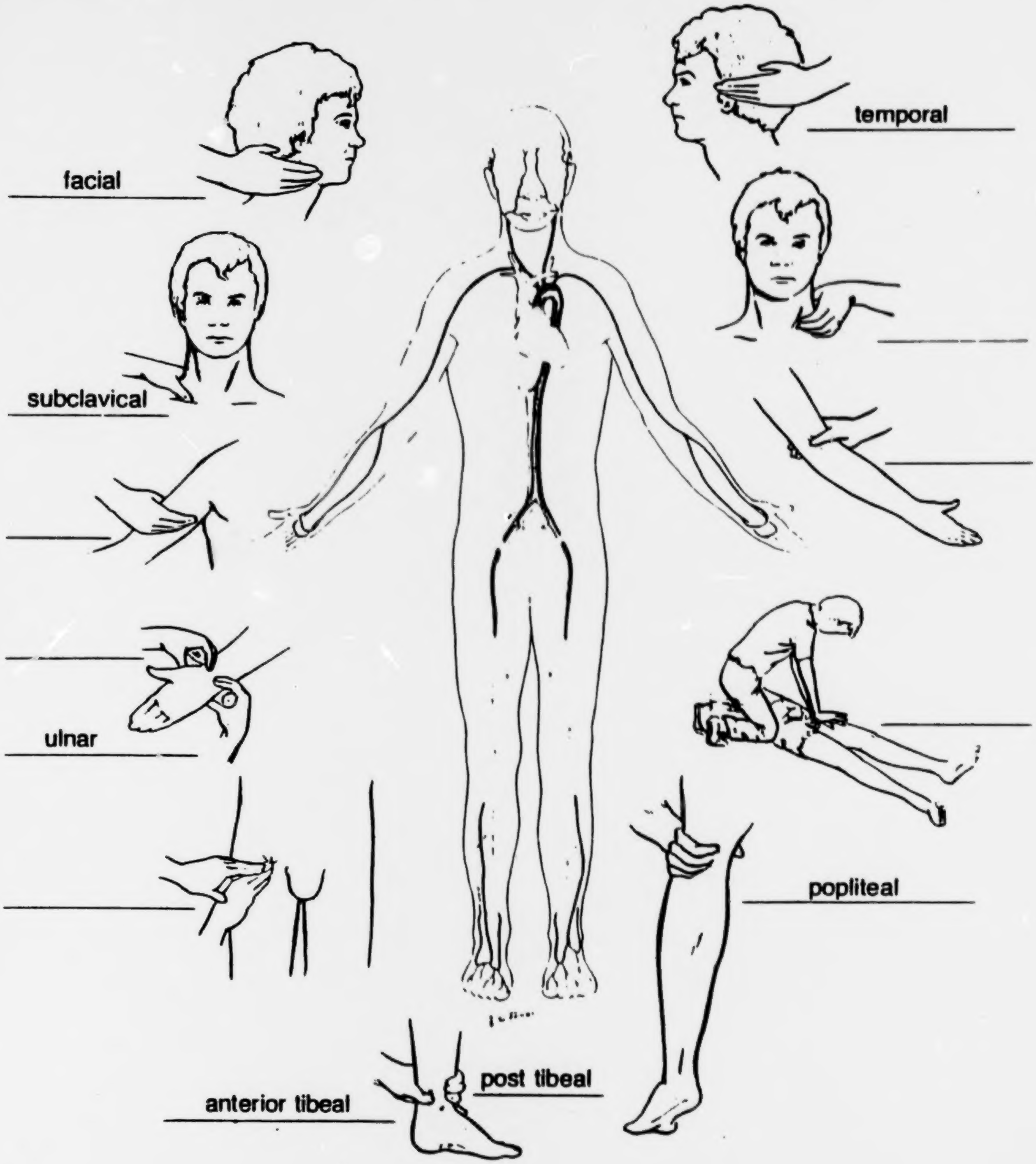
Internal bleeding

Perfusion

Tourniquet

Trauma

PRESSURE POINTS FOR CONTROL OF BLEEDING


temporal
facial
subclavical
ulnar
popliteal
post tibeal
anterior tibeal

Reprinted from Hafen, Karren, Uber, Pre-hospital Emergency Care, Instructor's Guide.

Lesson 8 Test and Evaluation: Airway Care, Pulmonary Arrest, Cardiac Arrest, Bleeding and Shock

Introduction

This lesson provides for interim evaluation student knowledge and skills. Each student completes a written examination designed to evaluate attainment of knowledge objectives specified for Lessons 1 through 7. Each student is evaluated on the skills taught in Lessons 1 through 7.

Objectives

At the conclusion of Lesson #8, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Pass a written test which evaluates knowledge objectives specified for Lesson 1 through 7.

—Pass a practical test to evaluate skill objectives with a minimum score of 70%.

Note: Objectives contained within 3, 4, and 5 may be minimized as they should have been previously evaluated, however, a review of select material is recommended.

Study Suggestions

1. Review all material contained within lessons 1 through 7.

Lesson 9 Review of Shock and Introduction to the Practical Application of Military Anti-Shock Trousers (MAST) or Pneumatic Counter Pressure Devices (PCPD)

Introduction

Uncontrolled shock can be fatal to the patient. The use of Pneumatic Counter Pressure Devices may prevent or correct cases of shock. This device can be dangerous and thorough training is therefore necessary.

Objectives

At the conclusion of Lesson #9, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—The student will be able to list 6 signs/symptoms of shock.

—The student will be able to list the indications for Military Anti-Shock Trousers or Pneumatic Counter Pressure Device (PCPD) application inflation.

—The student will be able to list the contraindication(s) for Military Anti-Shock Trousers (MAST) or Pneumatic Counter Pressure Device (PCPD) application.

—Given the Pneumatic Counter Pressure Device, a patient or manikin in the supine position, and a fellow student as an assistant, the student will be able to demonstrate the procedure for the application and inflation of the MAST.

Overview Of Lesson Contents

Shock (Review)

Shock is a failure of the circulatory system to provide sufficient circulation to every body part. Cellular perfusion fails.

Shock is caused by:

Failure of the heart to pump sufficient blood.

Severe blood or fluid loss so that there is insufficient blood traveling through the system.

Enlargement of blood vessels so that there is insufficient blood to fill them.

Breathing problems resulting in insufficient oxygen traveling through the system.

Types of Shock

- **Hypovolemic Shock (Blood Loss)**
- **Respiratory Shock (Inadequate Breathing)**
- **Neurogenic Shock (Loss Of Vascular Control By The Nervous System)**
- **Psychogenic Shock (Fainting)**
- **Cardiogenic Shock (Inadequate Functioning Of The Heart)**
- **Septic Shock (Severe Infection)**
- **Anaphylactic Shock (Allergic Reaction)**
- **Metabolic Shock (Bodily Loss Of Fluid)**

Signs And Symptoms Of Shock

Restlessness and anxiety (these signs may precede all others).

Weak and rapid (thready) pulse.

Cold and clammy skin.

Profuse sweating.

Pale or cyanotic face.

Breathing shallow, labored, rapid, possibly irregular or gasping.

Eyes dull or lusterless with dilated pupils.

Marked thirst.

Possible nausea or vomiting.

Gradual and steady drop in blood pressure.

Possible fainting in cases of rapidly developing transient shock.

Signs And Symptoms Of Anaphylactic Shock

The skin may burn, flush, itch or break out. The face and tongue may swell.

Cyanosis may be visible around the lips.

Breathing is difficult. There is a tightness or pain in the chest and persistent coughing.

Blood pressure drops and the pulse becomes weak or imperceptible.

Faintness and coma may ensue.

Certain principles of initial treatment may be applied to all patients in shock.

Secure a clear airway and administer oxygen.

Control bleeding.

Elevate lower extremities if injuries to them do not make this inadvisable.

Splint fractures.

Avoid rough handling.

Prevent **LOSS** of body heat.

Keep the patient supine unless he is personally more comfortable in another position.

Record blood pressure, pulse and other vital signs at 5-minute intervals.

Do not feed the patient or give him anything to drink.

Note: The basic care for shock is to care for the whole patient to **Prevent** shock.

Note: The only effective treatment for anaphylactic shock is an injection to combat the agent causing the reaction. The patient needs prompt transportation to a medical facility. The EMT may **Assist** an individual in administering medication (epinephrine) if allowed by State and local protocol.

Military Anti-Shock Trousers (MAST) or Pneumatic Counter Pressure Devices (PCPD)

Pneumatic Counter Pressure Device Provides translocation of blood from the lower extremities and abdomen and increased peripheral resistance.

It also provides direct pressure for bleeding tamponade in lower extremities and abdomen and pelvis.

It stabilizes fractures of pelvis and lower extremities.

Indications for use

Blood pressure less than 90 mm Hg systolic with other clinical signs and symptoms of shock.

Open or closed abdominal injury with shock.

Pelvic fractures with shock.

Femur fractures with shock.

Multiple trauma patients with shock.

Shock in a pregnant female (legs inflated only).

CPR (follow local and State protocol).

Other cases when order by a physician.

Pneumatic Counter Pressure Devices **MUST NOT** be used in patients suffering from:

Pulmonary Edema.

Pulmonary edema is identified by:

a) Fluid in lungs.

b) Rales.

c) Distended neck veins.

d) Discussed in more detail in Lesson 19.

All Pneumatic Counter Pressure Device applications on patients with a medical etiology must be preceded by checking for Pulmonary Edema.

The inflation of the pneumatic counter pressure device on patients with Pulmonary

Edema may result in rapid deterioration and death of the patient and should not be undertaken by the EMT.

There may be other restrictions placed on the use of the Pneumatic Counter Pressure Device by local or State protocols; know and follow all restrictions.

Inflation Procedures

Place garment under patient by:
  Sliding up from feet or,
  Log rolling patient.
  They may be placed on lifting apparatus prior to patient.
  The top of garment at inferior margin of rib cage.
Enclose left leg and secure.
Enclose right leg and secure.
Enclose abdomen and secure.
Open stopcocks.
Inflate with foot pump.
Check and record blood pressure.
Stop inflation when:
  Blood pressure reaches 100 mm/systolic.
  Velcro "crackles"
  Pop off valves release
Close stopcock and secure to prevent accidental deflation.

Do Not Deflate the Pneumatic Counter Pressure Device in the field unless ordered by and under the direct supervision of a physician knowledgeable in EMS.

It is a Dangerous procedure and requires that the blood pressure must be stabilized with I.V.'s first.

Deflation of the pneumatic counter pressure device may take extended periods of time.

Intravenous Fluid Resuscitation Is Not Considered To Be A Basic EMT Skill.

The EMT-A may be called upon to maintain an I.V. during a patient transfer, if allowed by protocol.

Study Suggestions

1. List the signs and symptoms of shock.
2. Practice taking blood pressures on a variety of individuals of differing height, weights and physical conditions.
3. List the signs and symptoms of Pulmonary Edema.

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Terminology List for Lesson 9

SHOCK

At the completion of this lesson you should be able to define and use the following terms correctly.

Allergic reaction

Auto-transfusion

Cannula

Constriction

Contraindication

Deflation

Dilation

Hypovolemic

Infiltration

Infusion

N.P.O.

Paralysis

Shock

Stabilizes

Transfusion

Lesson 9

Shock Handout

Signs/Symptoms:
- Restlessness, anxiety.
- Pulse - weak and rapid.
- Skin - cold, clammy, pale.
- Respirations - shallow, labored, rapid.
- Pupils - dilated, dull.
- Blood pressure - falling and low.
- Feelings of patient - nausea, thirst, restless.

Types:	1.	Hemorrhagic or Hypovolemic (Loss of body fluids)	Causes: Severe bleeding Severe burns (loss plasma) Dehydration in babies
	2.	Respiratory (Inadequate breathing)	Causes: Severe chest injury Airway obstruction Diseased lungs
	3.	Neurogenic (Paralysis of blood vessels causing dilation and requiring more blood than available)	Causes: Spinal cord injuries
	4.	Psychogenic Shock (Fainting) (Nervous system reaction causing momentary vascular dilation - temporary inadequate blood supply to brain)	Causes: Stress Excitement
	5.	Cardiogenic Shock (Inadequate heart function - damage to heart so it cannot move blood throughout body)	Causes: Heart attacks Heart disease Heart wounds
	6.	Septic Shock (Toxins damage vessels - dilate - loss of plasma through walls). Generally not seen by EMTA.	Causes: Long hospitalization Serious injury or illness
	7.	Anaphylactic Shock (Violent allergic reation)	Causes: Injections Eating Stings and bites Breathing
	8.	Metabolic Shock (Disturbances in body fluids and acid-base)	Causes: Vomiting Diarrhea Excessive urination Diabetes

Treatment of Shock:

1. Airway established and maintained. Administration of oxygen.
2. Control of obvious bleeding.
3. Elevate lower extremities 12 inches if not contraindicated by other injuries.
4. Prevent heat loss - blankets over and around patients.
5. Splint fractures - relieves bleeding and pain.
6. Handle gently and as little as possible.
7. Take vitals every 5 minutes and enter in ambulance report.
8. Keep patient NPO (nothing by mouth).
9. Apply MAST trousers unless condition contraindicates.
10. First priority - transfer as soon as possible.

MAST/PASG PROTOCOL

INDICATIONS

1. BP less than 90 mm Hg with OTHER CLINICAL SIGNS OF SHOCK.
2. Need to stabilize lower extremity or pelvic fractures.
3. Control of bleeding large lower extremity lacerations.

CONTRAININDICATIONS:

ABSOLUTELY NOT TO BE USED with patients with pulmonary edema, congestive failure, cardiogenic shock, or traumatic diaphragmatic hernia.

I. Application Guidelines:

A. The inflation of the MAST/PASG should NOT delay the transportation of the patient.

B. Deflation should never be attempted in the field (unless directed otherwise by medical control).

C. Use medical control either through Standard Operating Procedures or on-line medical control (via voice contact).

D. In a pregnant patient, inflate legs ONLY!

E. The MAST/PASG may be applied but NOT inflated on any patient that might deteriorate while in transport to the hospital.

F. THE PATIENT'S PHYSIOLOGICAL RESPONSE (INCLUDING BLOOD PRESSURE AND LEVEL OF CONSCIOUSNESS) IS THE SINGLE MOST IMPORTANT FACTOR IN DETERMINING CORRECT INFLATION PRESSURE AND THE END POINT OF INFLATION. GAUGE PRESSURE SHOULD NOT BE USED AT THE GUIDE TO CORRECT INFLATION PRESSURE OR AS THE END POINT OF INFLATION!

II. Application Procedure:

A. Primary survey and start oxygen per mask at 10-12 LPM.

B. Secondary Survey.

C. Use one of the standard application procedures of the MAST/PASG taking precautions to protect the spine or extremity injuries.

D. If FEASIBLE and able to be done RAPIDLY, cut the patient's pants off and remove shoes.

E. Wrap legs and abdomen snugly with Velcro straps.

F. Attach the tubing to each of the three compartments and foot pump.

G. Make sure valve stems are in the open position (in line with the tubing).

H. Pump trouser up until one of the following occurs:

   1. BP rises to above 100 mm systolic.
   2. Velcro straps slip and/or pop-off valve releases.
   3. Trousers indent with firm pressure.

I. Uneven compartment filling can be compensated for by turning off the valve to filled compartments.

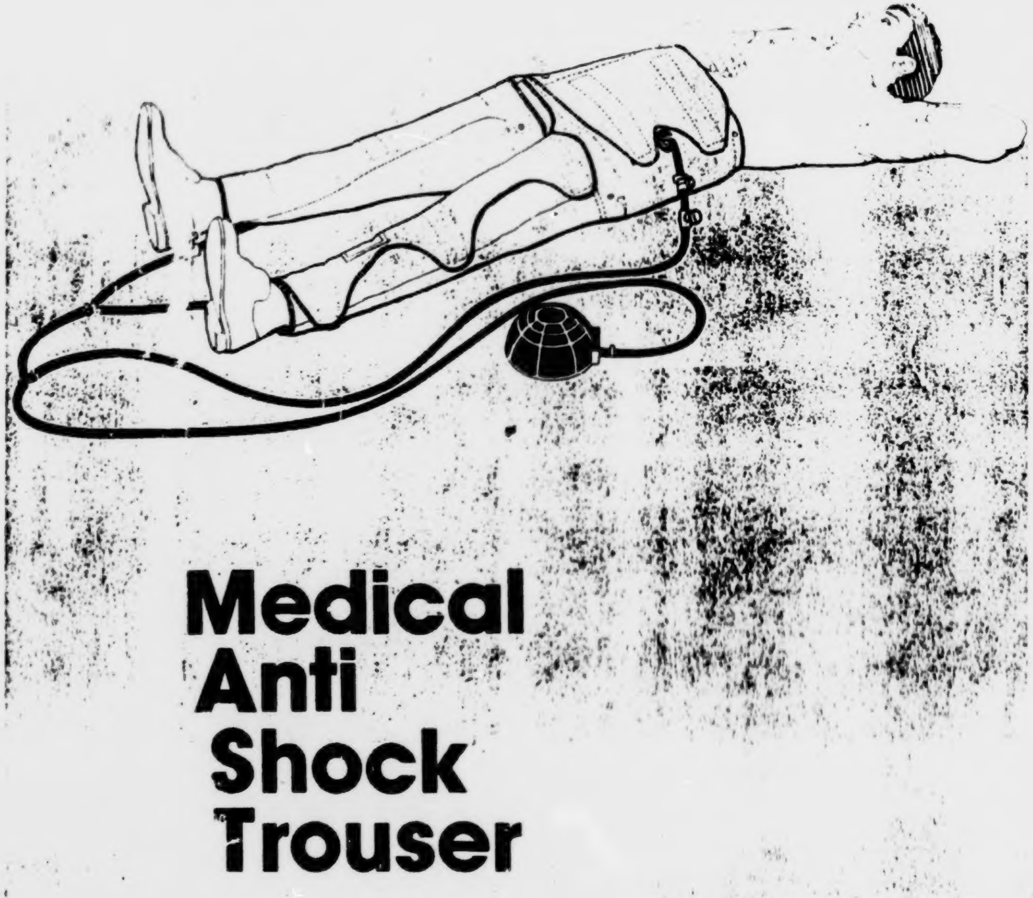
J. Note the time of the MAST/PASG inflation.

K. Monitor vital signs, especially the blood pressure, every five minutes until arrival to the ER.

L. DO NOT DEFLATE MAST! In the event that respiratory distress develops after inflation, contact medical control for further orders.

M. Upon arrival to the ER, provide the nurse and/or doctor with the time of inflation and the vital signs before and after inflation.

The MAST® Manual



Medical
Anti
Shock
Trouser

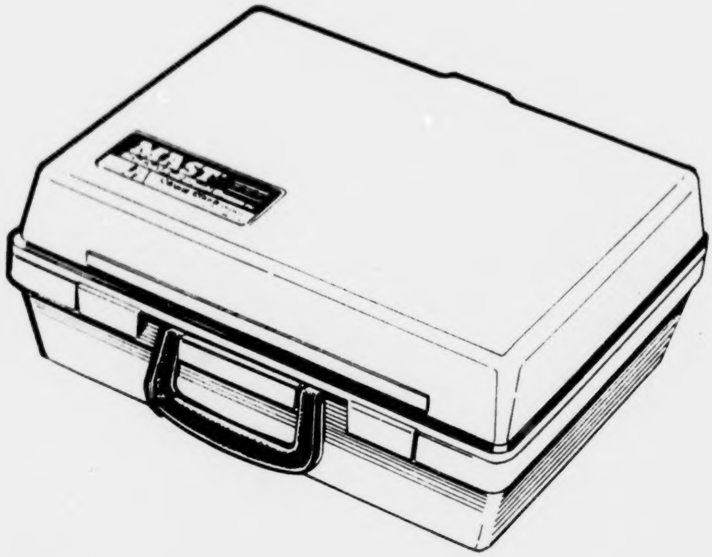
6-9

History of Medical Anti-Shock Trousers

The simplest form of shock is that of syncope, or simple fainting. This has been managed for many years by basic first aiders, simply by laying the patient down and raising the legs. Blood from the legs is drained back into the heart, brain, lung circulation so that the brain is resupplied with oxygenated blood. Eschmark bandages are routinely utilized to squeeze blood from the extremity, prior to initiation of surgical procedures.

With the development of high performance aircraft during World War II, it was possible to execute maneuvers which, in effect, intensified the force of gravity whereby centrifugal force drained blood from the heart, brain and lung circulation into the extremities. It was found possible to counteract this effect by wearing "Anti-Gravity Suits", which prevented this interference with blood circulation by external pressure.

Subsequently, the concept was tested and evaluated in civilian pre-hospital care systems, stimulating the development of a variation of the Military Anti-G Suit known as MAST (Medical Anti-Shock Trouser).

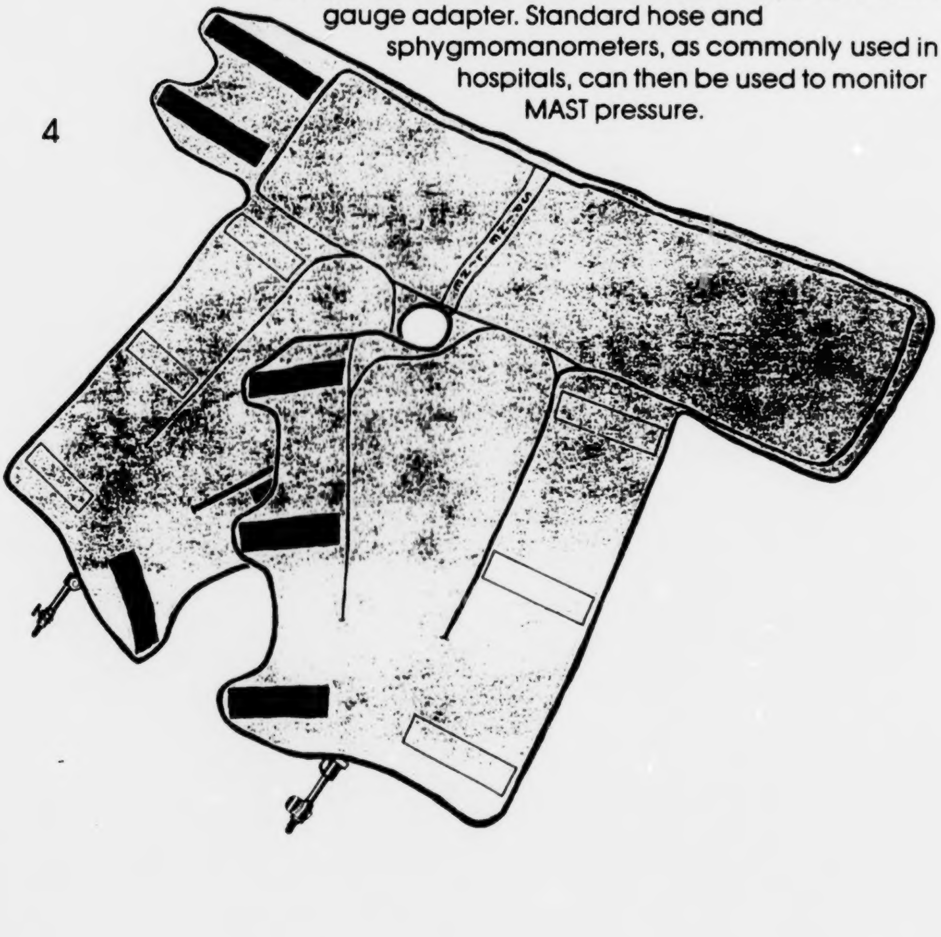


Description of MAST®

MAST is a device designed to counteract internal bleeding and hypovolemia by the application of counterpressure around the legs and abdomen, producing an artificial peripheral resistance, and ensuring adequate coronary perfusion.

Constructed in a trouser configuration, MAST is self-contained and can be applied quickly and easily. Air chambers in the legs and abdomen, controlled by ball valves, can be inflated and deflated individually. Each chamber is provided with an automatic relief valve that prevents overpressurization. NO ADDITIONAL PRESSURE MONITORING EQUIPMENT IS NECESSARY.

Some physicians prefer to monitor exact MAST Trouser pressure in certain situations. Pressure monitoring can be accomplished in two ways. One method employs the pressure gauge adapters supplied with each MAST, which provide for easy gauge hookup. To install, simply remove each relief valve (3) and replace it with a gauge adapter. Standard hose and sphygmomanometers, as commonly used in hospitals, can then be used to monitor MAST pressure.



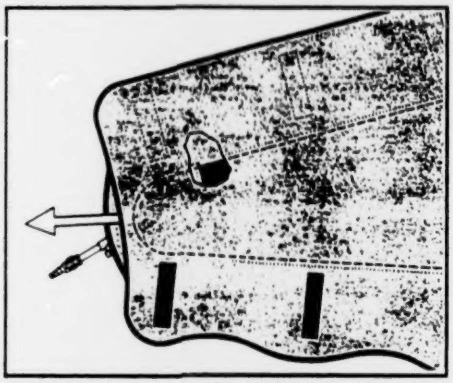
BEST COPY AVAILABLE

The second method employs our MAST Pressure Monitoring Assembly. This optional accessory has many features which may be desirable in certain situations.

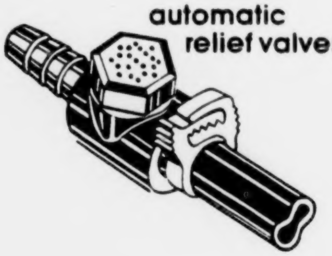
The detailed description, function and installation procedure of this unit can be found under the heading: MAST Pressure Monitoring Assembly.

The MAST unit encircles the legs and lower torso up to the rib cage; it does not enclose the feet. The abdominal and leg sections, fastened with velcro hook and loop closures, are inflated by a simple pump compressed by the foot, knee, or hand. A small opening is provided in the groin area of the trouser, so that a catheter can be inserted without removing the garment.

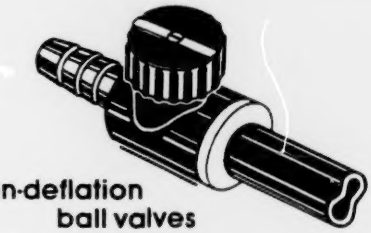
The Pedi-MAST, identical in design and operational characteristics to the Adult MAST, will fit children ranging from 46" to 58" in height and from 40 to 100 pounds in weight.



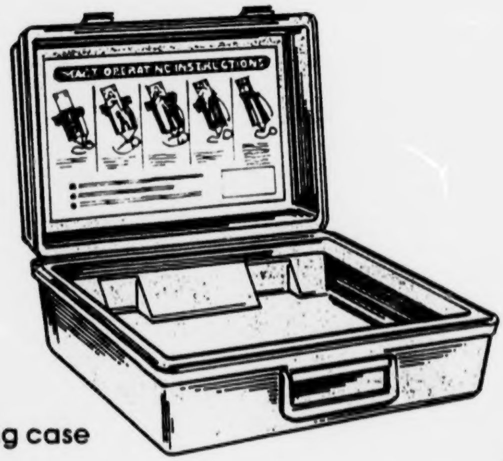
removable air chambers



automatic relief valves



inflation-deflation ball valves

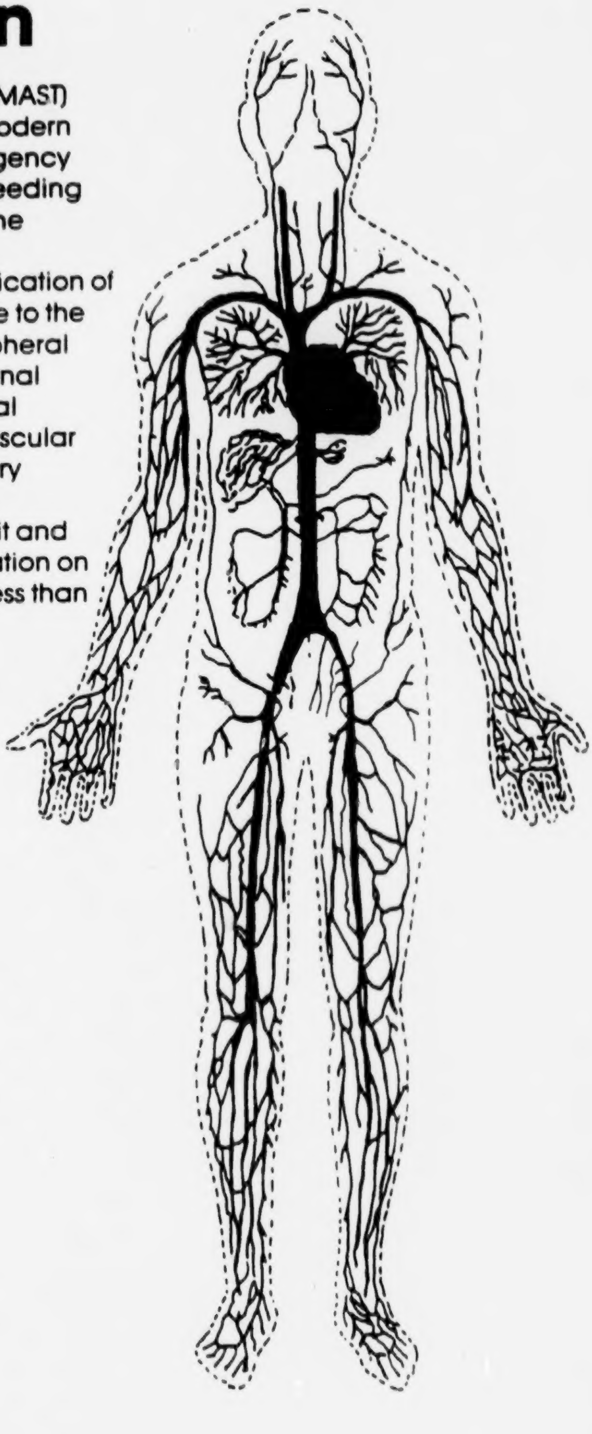


carrying case

Principle of Operation

The Medical Anti-Shock Trouser (MAST) applies a basic principle in a modern way, helping to cope with emergency situations that involve certain bleeding and low circulating blood volume (hypovolemia).

The basic principle is the application of uniform external counterpressure to the body, creating an artificial peripheral resistance and decrease in internal transmural pressure. Thus, internal bleeding is arrested, external vascular space is minimized, and coronary perfusion is sustained. MAST is a self-contained, easy to apply unit and can be effectively put into operation on the body by a trained team, in less than one minute.



MAST® Provides Important Benefits

This device can prevent or reduce further loss of blood in areas of the body which previously could not be treated with uniform applied pressure, through the following:

1. By preventing pooling of blood in the lower portion of the body, MAST converts an inadequate circulating blood volume to a possibly adequate circulation for the total body. This minimizes the occurrence of irreversible damage (caused by the shock state) to the cardiac, central nervous, and other vital organ systems.
2. Autologous transfusion or autotransfusion of the right type of blood is provided immediately.
3. Both arterial and venous hemorrhage are arrested in minimal time.
4. Coronary perfusion is maintained.
5. Veno puncture of vessel for IV fluid therapy is made easier as the cardio-vascular system is stabilized.

The combination of preventing blood loss and directing blood to the most vital areas, has the effect of a transfusion of blood of the correct type. Stabilization of the patient is achieved, resulting in more orderly transport and more accurate classification of the patient, consistent with the degree of injury.

Also, as the blood supply above the diaphragm is increased, an additional advantage is that the volume of blood in the arms is also increased. This makes the starting of Intravenous Fluid Therapy much simpler; therefore, application of the MAST Trouser before attempting to start an IV is the preferred method of management rather than attempting to start IV fluids first.

Indications for Using MAST®

1. **Systolic pressure below 80 mmHg.** Any patient with a systolic pressure below 80 mmHg. regardless of the cause (*In cardiogenic shock caution must be exercised). A patient whose blood pressure is below 100 mmHg. systolic is also probably a candidate for its application.

2. **Suspected fractures of the femur and the pelvis.** A fractured femur cannot be managed by other pneumatic splints because the joint above the fracture is not immobilized; however, with the pneumatic trousers both the joint above as well as the joint below the fracture are immobilized. They do not, however, immobilize the joint below a fracture of the *lower* leg (ankle) and therefore must be accompanied by some other type of immobilization in tibia and/or fibula fractures. In a fractured pelvis, not only is the pelvic fracture stabilized but blood loss from such fractures is significantly reduced by the external application of pressure.

8 3. **Suspected intra-abdominal hemorrhage.** Hemorrhage is controlled initially by direct pressure. Intra-abdominal blood loss, such as a leaking abdominal aneurysm or a traumatized bleeding organ (aorta or vena cava, or a solid organ, spleen, kidney or liver), can be controlled by the application of the external pressure exerted by the trouser.

AMBULANCE
AMBULANCE

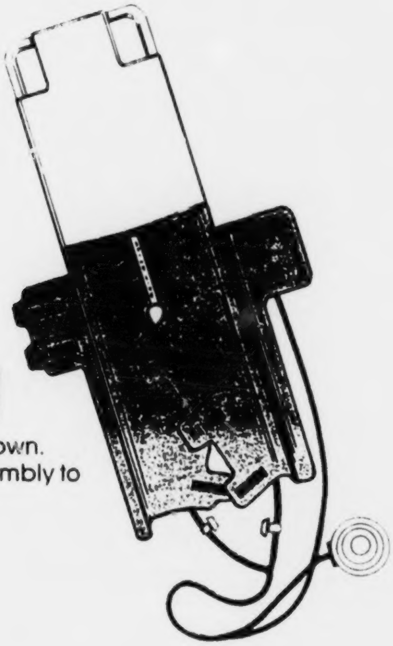
Contraindications and Precautions

The consensus of physicians, who have conducted in-depth evaluation of the Medical Anti-Shock Trouser, is that MAST should not be used in the presence of frank pulmonary edema. Note: Local Protocols differ, therefore the decision to apply MAST should be contingent on accepted protocol, which may contraindicate its use in other circumstances, or mandate other precautions.

Preparation and Application of MAST®

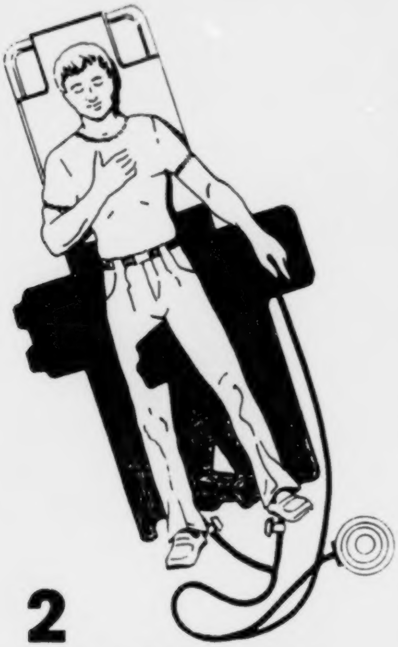
To be most effective, MAST should be applied as soon as possible. Application in the field permits stabilization and transportation in a controlled manner. In cases of external hemorrhage, direct pressure should be applied to the bleeding vessel.

Little preparation is needed. MAST can be placed directly over open wounds or wounds that have been dressed and bandaged. When there is severe damage to a limb and a tourniquet is required, MAST can be applied over it if the device that tightens the tourniquet does not interfere with the positioning of leg fastenings or air chambers. Angulated fractures must be straightened and manual traction must be maintained until MAST is pressurized and the splinting effect is assured.



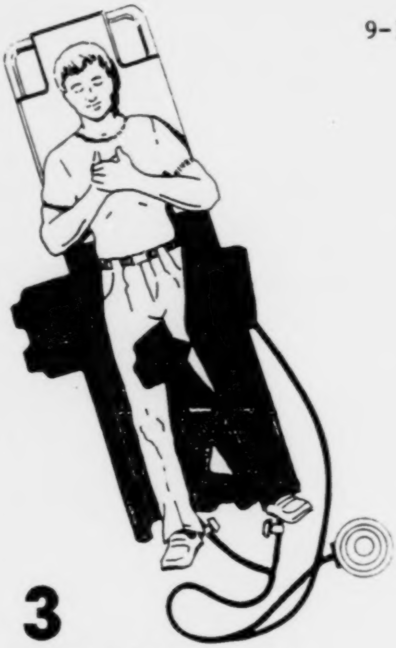
1

Lay the MAST out as shown. Attach foot pump assembly to shut off valves.



2

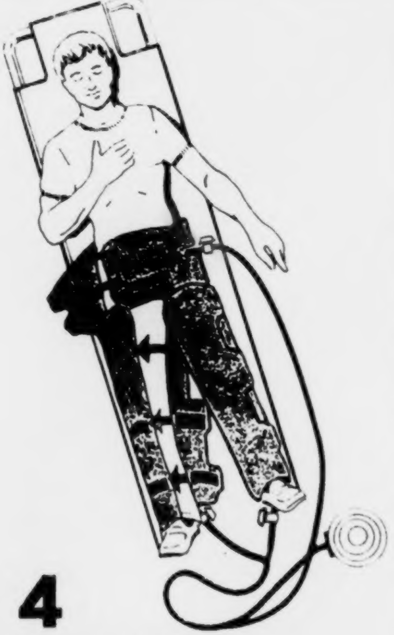
Put the patient on the MAST face up (supine) so that the top of the garment will be just below the lowest rib. Align patient with spine line label.



3

Wrap left leg of garment around the patient's left leg and secure it with velcro strips.

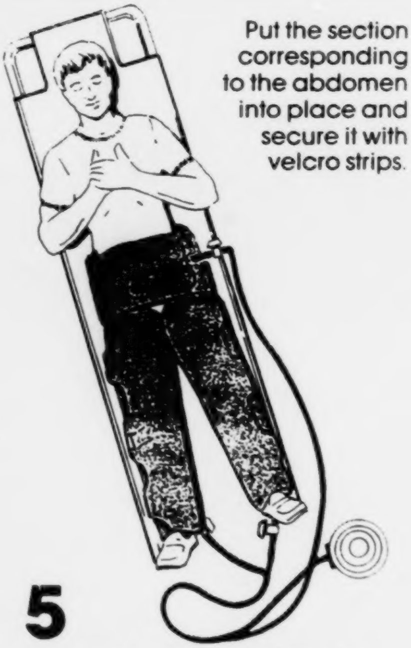
11



4

Wrap the right leg of garment around the patient's right leg and secure it with velcro strips.

Put the section corresponding to the abdomen into place and secure it with velcro strips.



5

Using the foot pump, inflate the trousers until air exhausts through the relief valves and/or the patient's vital signs become stable. Close the inflation/deflation valves.

Removal of MAST®

Once MAST is applied, you must resist any urge or request to lower the pressure to check bleeding wounds, or the position of dressings, bandages and splints. Deflating MAST before replacement fluids are running can cause irreversible shock! When the patient has been transferred to the care of emergency department personnel, they will deflate the trousers gradually, as fluids are infused. The deflation procedure is to reduce pressure slowly, beginning with the abdominal chamber. Allow a small amount of air to escape and check the blood pressure; when the systolic blood pressure drops 5 mmHg., cease deflation and infuse IV fluids to return the pressure to within normal limits before resuming the deflation process. Reducing the pressure by increments while closely monitoring blood pressure will accomplish two major functions. First, it will allow replacement of the reduced blood volume. Second, it will restore circulation to the part of the body which has had a circulation deficiency.

SUMMARY

12 The indications for application of MAST are:

1. Patients in shock with systolic pressure below 100 mmHg.
2. Patients with a fractured femur or fractured pelvis.
3. Patients hemorrhaging in the lower extremities or abdomen.

CAUTION

MAST SHOULD NOT BE DEFLATED OR REMOVED UNTIL:

1. A physician is present and has taken charge of the patient.
2. Fluids are available for transfusion.
3. Anesthesia and surgical teams are ready for the patient (if an operation is necessary).

Lesson 10
Soft Tissue Injuries

Introduction

Soft-tissue injuries will be frequently observed in accident situations. Proper care of wounds can control bleeding, prevent infection, prevent shock and aid in patient comfort and well-being. This lesson covers emergency care for wounds and includes practice in dressing and bandaging.

Objectives

At the conclusion of Lesson #10, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List the layers of skin
- List the 2 major functions of the skin.
- List 4 major structures within the skin and state the function of each.
- Describe 5 types of wounds and the emergency care of each.
- Describe how to care for a patient with an amputation and the care of the amputated part.
- Given a programmed patient, demonstrate proficiency in dressing and bandaging wounds of the following body parts:
  - —top of head
  - —forehead
  - —ear
  - —cheek
  - —jaw
  - —neck
  - —shoulder
  - —elbow/knee
  - —arm/leg
  - —hand/foot
- Given a programmed patient, demonstrates proficiency in applying a pressure dressing.
- Describe the care of wounds that would be considered unique to the pediatric patient.

Overview Of Lesson Contents

The Skin

The Functions Of The Skin Are:

Protection Of The Body and,
Regulation Of Body Temperature.

Layers Of The Skin Are:

Epidermis,
Dermis
Subcutaneous Tissue.

Closed Soft-Tissue Injuries

Closed injuries may range from damaged tissue beneath the skin to severe internal bleeding.

A contusion (or bruise) develops in the damaged tissue.

When much tissue is damaged, blood may pool in the damaged tissue and a hematoma may form.

Small bruises require no special care.

For severe injuries, bleeding should be controlled by counter-pressure.

If bleeding is associated with a fracture, splinting is indicated.

Open Soft Tissue Injuries

Types

Abrasion
Laceration
Avulsion
Puncture

Procedures for care are:

Control bleeding

Immobilize the part and keep the patient quiet.

Preserve avulsed parts.

Do not remove impaled objects.

Dressing And Bandaging

Functions to:

Stop bleeding,

Protect wound from further damage, and

Prevent further contamination and infection.

DRESSINGS are placed directly over the wound to control bleeding and prevent contamination.

A bandage holds a dressing in place. It should be tight enough to control bleeding but not so tight as to interfere with circulation.

To Apply A Pressure Dressing.

Cover wound with bulky sterile dressing,

Apply hand pressure over wound until bleeding stops,

Apply firm roller bandage, and

Check for bleeding and circulation.

Study Suggestions

1. Practice dressing and bandaging each of the body parts covered in this lesson. Use a classmate or friend as a "patient".
2. Tape a small stick to your leg and practice bandaging an impaled object.
3. Two of the patient's fingers have been severed—one is severed completely and one is hanging by a flap of skin. Describe how you would care for this patient.
4. The patient has suffered a severe blow to the arm and a large lump has developed. What has happened? How would you care for this patient?
5. You have dressed and bandaged a severe open wound of the leg. You suddenly notice that the bandage is soaked with blood. What would you do and why?
6. You are about to move an unconscious patient whose arm has been bandaged. The hand is white. What would you do and why?
7. Review the types of open wounds and be prepared to identify each from an illustration or simulation. Be prepared to describe or demonstrate how you would care for each wound type.

Terminology List for Lesson 10

SOFT TISSUE INJURIES

At the completion of this lesson, you should be able to correctly define and use the following terminology.

Abrasion

Avulsion

Bandage

Bruise

Contusion

Dressing

Hematoma

Impaled object

Laceration

Penetration

Perforation

Puncture

Sterile

Wound

Lesson 11 Principles of Musculoskeletal Care and Fractures of the Upper Extremities

Introduction

Various types of fractures will be encountered in accident situations. Proper care of the fracture patient will improve his recovery time by preventing or minimizing the following complications: damage to muscles, nerves, blood vessels or skin tissue; restriction of blood flow; excessive bleeding; pain; and even paralysis. This lesson covers general concepts of fractures and dislocations and includes practice in immobilizing fractures of the upper extremity.

Objectives

At the conclusion of Lesson #11, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List the bones in the upper extremity.
- List the bones in the lower extremity.
- List the vertebrae groupings of the spinal column.
- List the bones or bone groupings of the thoracic cage.
- List and define the two types of fractures.
- List five classifications of fractures.
- List 5 signs of fractures.
- List 3 signs of dislocations.
- List 3 signs of sprain.
- List distinctions in fractures and fracture care for pediatric patients.
- Describe the appearance of the extremity with each of the five classes of a fracture.

Overview Of Lesson Contents

The Muscular System

Muscle is a special form of tissue that contracts or shortens when stimulated and permits the body to move.

Types

Voluntary (Skeletal) Muscles. Actions are under conscious control.

Involuntary (Smooth) Muscles. Actions are not under conscious control.

Cardiac Muscle. The heart is a special kind of involuntary muscle with a very good blood supply and its own regulatory system.

The Skeletal System normally has 206 bones. It has the following functions.

It gives form to the body.

It supports the body and permits standing erect.

Muscles attached to the skeleton by ligaments permit motion at most places (joints) where bones join together.

It protects body organs.

The skull has two main divisions: the cranium and the face.

The Spinal Column, has 33 bones, called vertebrae, and 5 sections:

Cervical spine
Thoracic (Dorsal) spine
Lumbar spine
Sacral spine
Coccygeal spine

The thorax is made up of:

Twelve pairs of ribs.
Twelve thoracic vertebrae.
Sternum.

The upper extremities are designed as follows:

The upper extremities are attached to the shoulder girdle which is formed largely by the shoulder blade (scapula) and the collarbone (clavicle).

- The arm (shoulder to elbow) has one bone known as the humerus.
- The forearm (elbow to wrist) has two bones: the radius on the thumb side and the ulna on the little finger side.
- The hand has many bones including those of the wrist and fingers.

The pelvis and lower extremities are designed as follows:

- The pelvis is a bony ring formed by the sacrum and two pelvic bones.
- The lower extremity is attached to the pelvis at the hip joint.
- The upper leg (thigh) contains one bone known as the femur.
- The lower leg has two bones; the tibia in front and fibula in back.
- As with the hand, the foot has many bones.
- The leg also has a bone at the kneecap known as the patella.

General Concepts Of Fractures And Dislocations

A **Fracture** means a break in a bone.

Basically, fractures are two types:

- **Open,** in which the skin has been broken.
- **Closed,** in which the skin has not been broken.
- **Note:** Both open and closed fractures can result in serious blood loss. In addition open fractures have the danger of infection.

Fractures may also be classified by appearance:

- Greenstick
- Transverse
- Oblique
- Spiral
- Comminuted
- Impacted

Signs Of Fractures

- **Deformity.** The arm or leg may be angled where there is no joint.
- **Tenderness.** The point of the break may be tender or sore.
- **Crepitus.** If the patient moves, there may be a grating sound or sensation where the broken ends of the bone rub together.
- **Swelling And Discoloration.** May not be apparent for several hours.
- **Loss Of Use.** The patient will not be able to move the limb or will do so with great pain.
- **Exposed Fragments.** In open fractures, fragments of the bone may protrude through the skin.

A **Dislocation** is the displacement of the bone ends that form a joint.

Any joint may be dislocated; those frequently dislocated are the shoulder, elbow, fingers, hip and ankle.

Signs are similar to those for fractures, the most important being:

- Deformity of the joint.
- Pain or swelling.
- Loss of movement.
- A joint locked in a deformed position.

A **Sprain** is a partial tear or stretching of a ligament.

Signs are similar to those for fractures and dislocations except there are never protruding bone fragments and there is no deformity except swelling at a joint.

Differentiating Signs between fractures, dislocations and sprains. The following signs can be used to diagnose a fracture or dislocation.

- Fracture—an angle in an arm or leg where there is no joint.
- Fracture—an open wound with a bone or bone fragments protruding.
- Dislocation—a deformity at a joint.

Note: If the above signs are not present but there is pain or tenderness or loss of movement of an extremity, it should be assumed that there is a fracture and the limb should be treated accordingly.

Review Of Patient Examination

As indicated previously, a patient survey is performed in two stages: an initial survey of life-threatening problems and a secondary survey of injuries not threatening to life.

In the secondary survey, the EMT makes a head-to-toe examination of the patient palpating and systematically observing for wounds and deformities. The EMT-A asks conscious patients if they feel pain or sensation. In unconscious patients, check for indications of pain, sensation.

The EMT-A should always observe the accident scene and check witnesses to attempt to determine any mechanism of injury.

The EMT-A should establish rapport with conscious patient—identifyng self, obtaining and using patient's name, explaining intended movements and procedures, reassuring patient.

Secondary Survey Procedures Are:

Head.

Observe for level of consciousness.

Check mouth for foreign objects, bleeding.

Check pupils.

Observe for wounds.

Feel gently for depressions in the skull.

Check ears and nose for fluid or blood.

Neck.

Observe for cuts, bruises, deformities.

Feel for areas of tenderness or deformities.

Upper Extremities.

Check for cuts, bruises, pain, deformities, unusual positions.

Check for sensation and circulation.

Ask patient if he can move arms, only if other procedures show no injury.

Chest.

Check for bruises, pain, deformities.

Check that both sides of the chest expand normally upon inspiration.

Back And Buttocks.

Check for cuts, bruises, pain or deformities.

Abdomen And Pelvis.

Check abdomen for tenderness or rigidity.

Compress pelvis gently.

Lower Extremities.

Check for cuts, bruises, pain, deformities, unusual positions.

Check for sensation and circulation.

Ask patient if he can move his legs, only if other procedures show no injury.

Medical History

Check for tags, bracelets, etc.

Vital signs.

Question patient.

General Principles Of Splinting

The primary objective for splinting is to prevent motion of bone fragments or dislocated joints.

Good emergency care can decrease hospital time and speed the patient's recovery by preventing or minimizing the following complications:

Damage to muscles, nerves or blood vessels caused by broken ends of bone.

Laceration of the skin—that is, a closed fracture becomes an open fracture.

Restriction of blood flow as a result of bone ends pressing against blood vessels.

Excessive bleeding due to tissue damage caused by bone ends.

Increased pain associated with movement of bone ends.

Paralysis of extremities due to fractured spine—discussed in a subsequent lesson.

General Rules Of Splinting

Remove or cut away clothing.

Cover all wounds with a sterile dressing.

Do not replace protruding bones.

Note and record circulation and neurological status distal to the injury before and after splinting.

Straighten deformities near joint with gentle steady traction unless pain is significant or resistance to correction is encountered.

Straighten an angulated fracture before splinting—use gentle traction.

Correct neck and spine deformities only if necessary to maintain an open airway.

Pad each splint carefully to prevent pressure and discomfort to the patient.

Immobilize the joint above and below the fracture or the bone above and below a dislocation.

Splint the patient BEFORE moving him.

When in doubt, splint.

Splinting The Upper Extremity

For Fractures Of The Clavicle—apply a sling and swathe.

For Fracture Of The Scapula—apply a sling and swathe.

For Dislocations Of The Acromioclavicular Joint—apply a sling and swathe.

For Anterior Dislocations Of The Shoulder Joint—Place pillow or rolled blanket between area and chest, apply sling and swathe.

For Fractures Of The Humerus, procedures are:

Proximal End—apply sling and swathe or bind arm to trunk.

Shaft—apply sling and swathe.

Distal End—apply sling and swathe or long-arm padded splint; check circulation.

For Dislocations Of The Elbow Joint—apply sling and swathe or long-arm padded splint; check circulation.

For Fractures Of The Proximal Ulna And Radius—apply an air splint, folded pillow, long-arm padded splint, or sling and swathe.

For Fractures Of The Forearm—apply an air splint or long-arm padded splint; apply sling.

For Fractures Of The Wrist—apply a bulky hand dressing and a padded board splint or air splint; apply sling.

For Dislocations Of The Wrist—straighten gently; apply a bulky hand dressing and an air splint or long-arm padded splint; apply sling.

For Fractures And Dislocations Of The Hand And Fingers—splint in position of function—place roll of gauze in palm; apply air or padded splint.

Study Suggestions

1. Practice immobilizing the following fractures and dislocations. Use a classmate or friend as a "patient". Where rigid splints are required, improvise if you do not have splints available. Be sure to pad all splints adequately.

- Fracture of the clavicle.
- Fracture of the humerus.
- Fracture of the elbow.
- Fracture of the forearm.
- Dislocation of the shoulder.
- Fracture of the hand.

2. Practice performing an examination for fractures, dislocations and sprains. Use a classmate or friend as a "patient". As you perform the examination, describe aloud what you are doing and why.

3. Review the types of fractures and be prepared to identify each from an illustration or simulation.

Lesson 11

FRACTURES OF UPPER EXTREMITIES

At the completion of this lesson, you should be able to define and use the following terms correctly.

Acromioclavicular joint

Angulated

Deformity

Dislocation

Extremity

Fracture

Ligaments

Palpate

Protruding

Sling

Splint

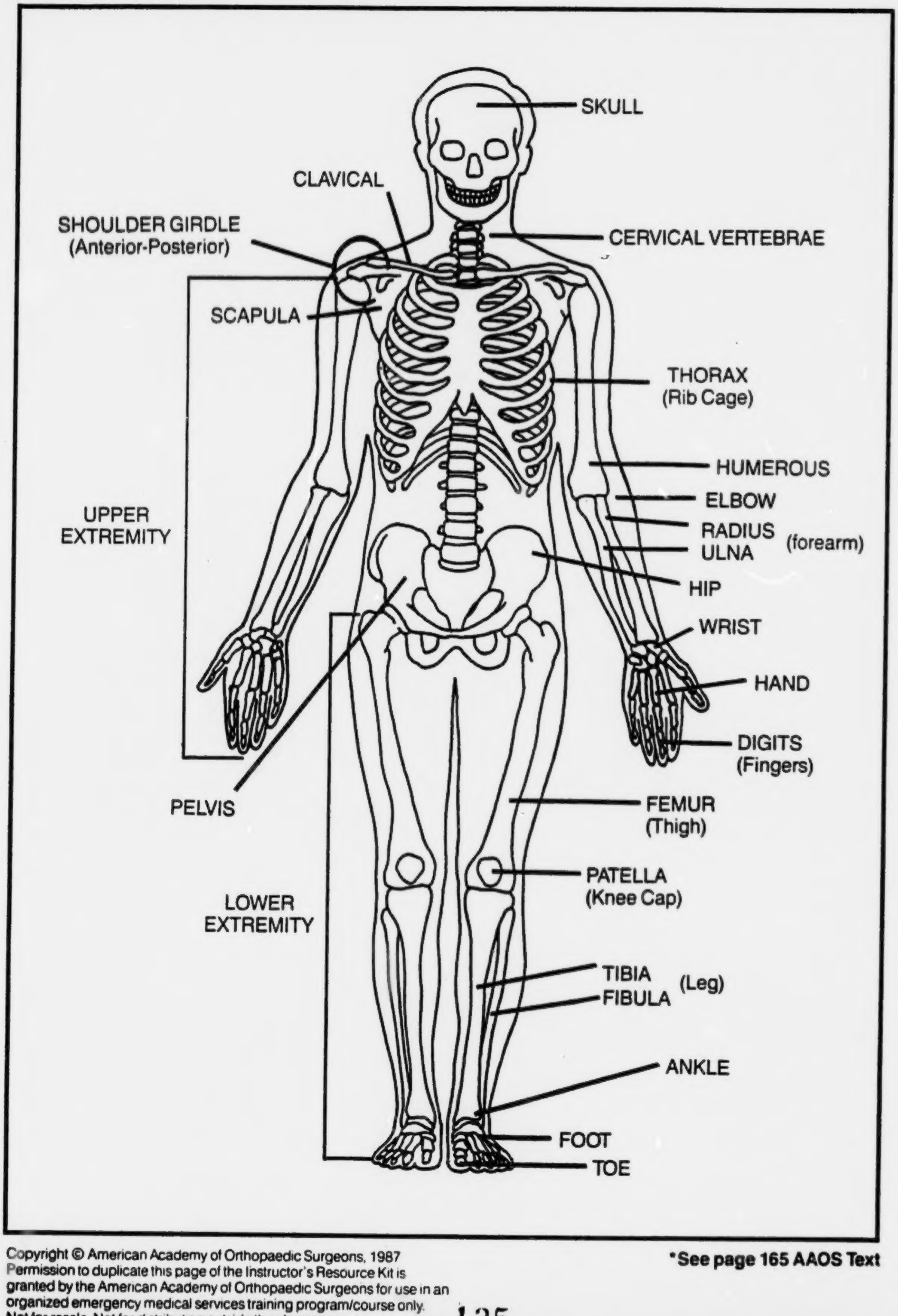
Sprain

Swathe

Tendons

Traction

FRACTURE/DISLOCATION SITES


SKULL
CLAVICAL
SHOULDER GIRDLE (Anterior-Posterior)
CERVICAL VERTEBRAE
SCAPULA
THORAX (Rib Cage)
HUMEROUS
ELBOW
UPPER EXTREMITY
RADIUS
ULNA
(forearm)
HIP
WRIST
HAND
DIGITS (Fingers)
PELVIS
FEMUR (Thigh)
PATELLA (Knee Cap)
LOWER EXTREMITY
TIBIA
FIBULA
(Leg)
ANKLE
FOOT
TOE

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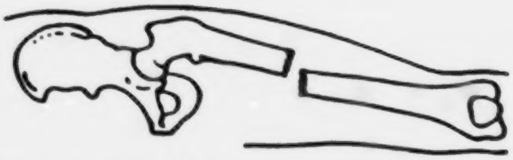
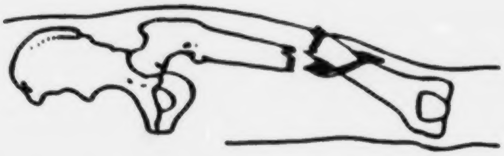
*See page 165 AAOS Text

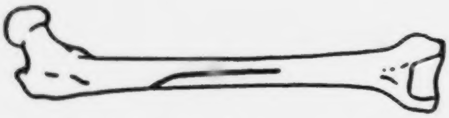
Types of Fractures



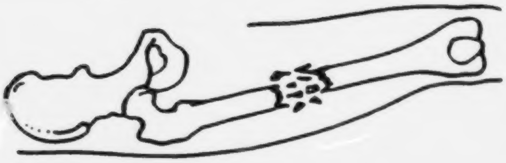
Closed (simple) fracture—No open wound



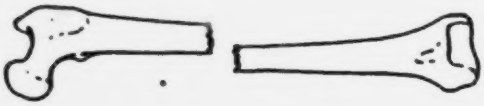
Open (compound) fracture—Wound in skin communicates with fracture



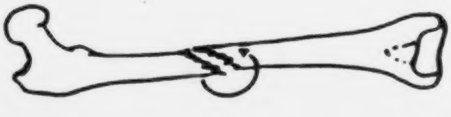
Greenstick fracture—Bone broken, bent but still securely hinged at one side



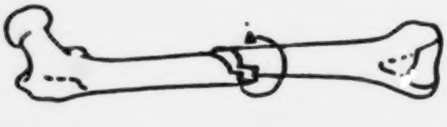
Comminuted fracture—Bone splintered into fragments



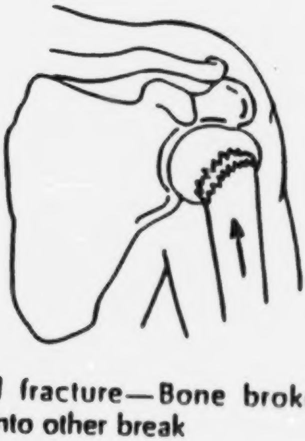
Transverse fracture—Break runs across bone



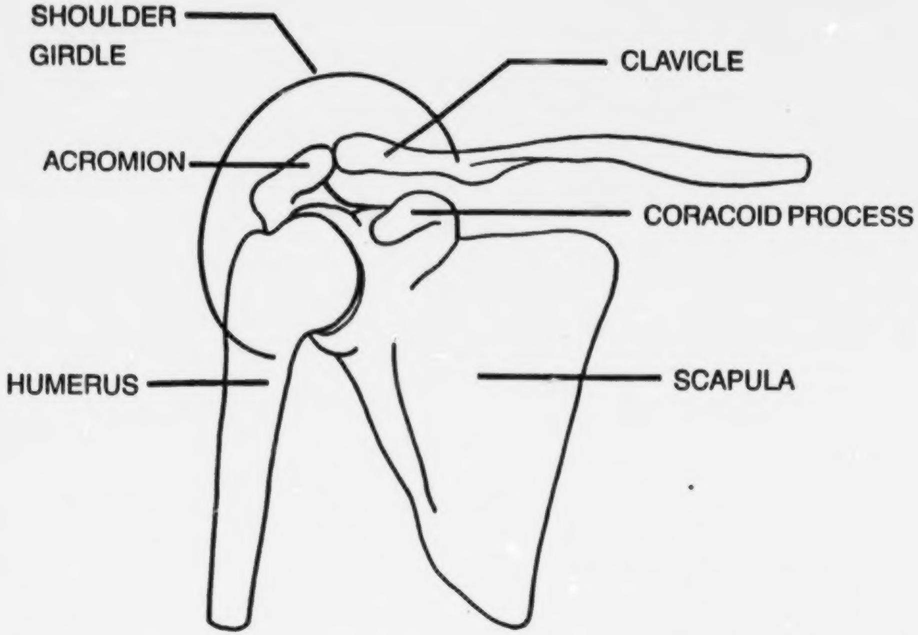
Oblique fracture—Break runs in slanting direction on bone

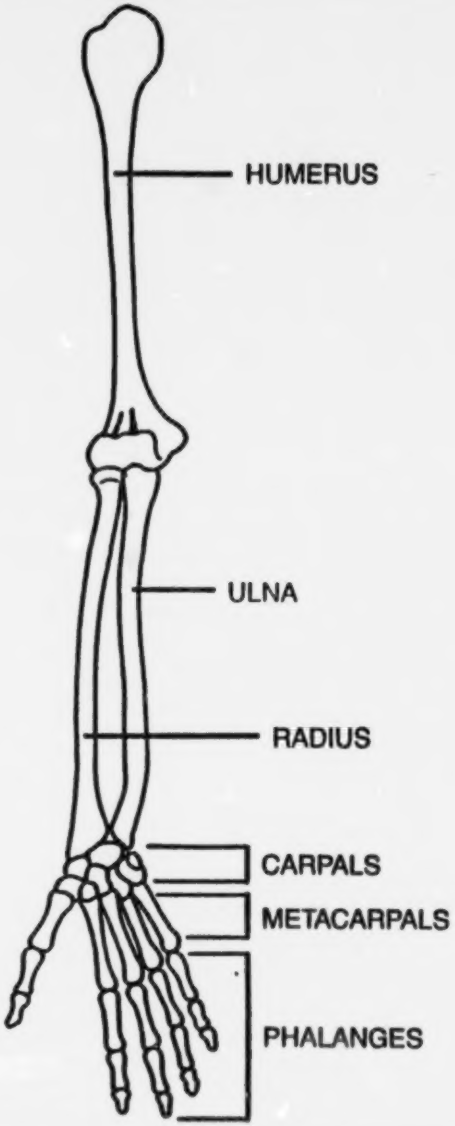


Spiral fracture—Break coils around bone



Impacted fracture—Bone broken and wedged into other break


SHOULDER GIRDLE
CLAVICLE
ACROMION
CORACOID PROCESS
HUMERUS
SCAPULA


HUMERUS
ULNA
RADIUS
CARPALS
METACARPALS
PHALANGES

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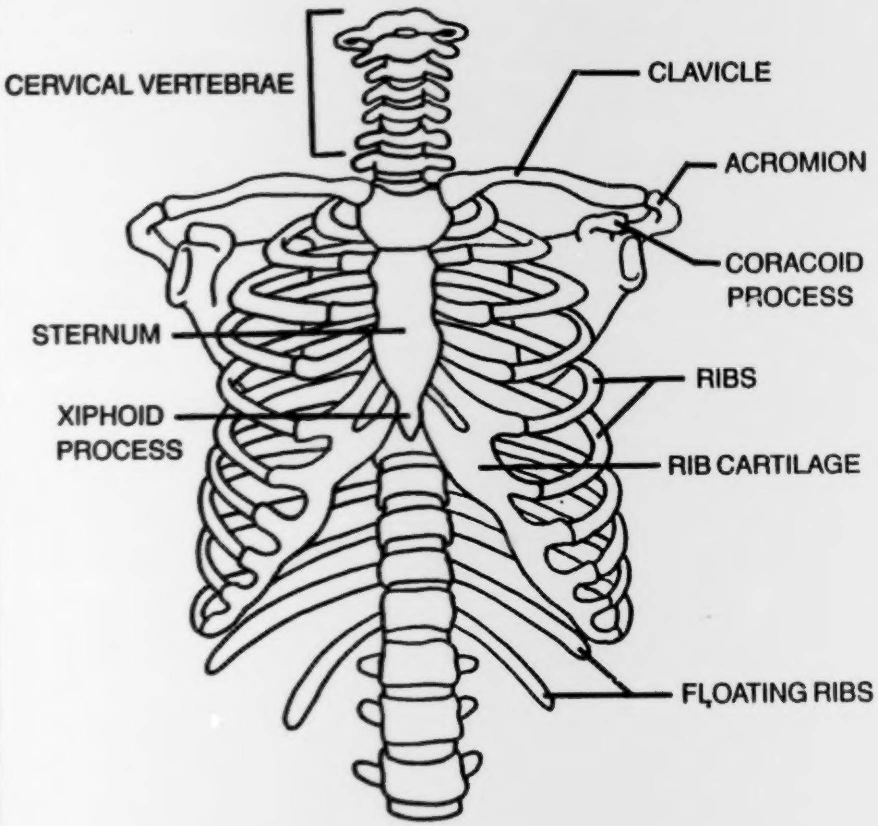
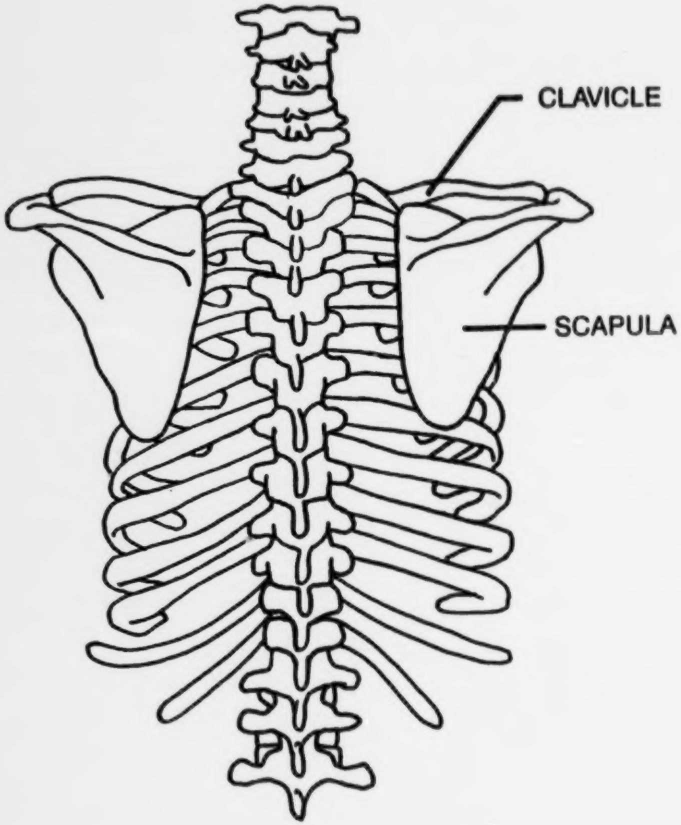
***See page 171, AAOS Text**

RIB CAGE


CERVICAL VERTEBRAE
CLAVICLE
ACROMION
CORACOID PROCESS
STERNUM
RIBS
XIPHOID PROCESS
RIB CARTILAGE
FLOATING RIBS


CLAVICLE
SCAPULA

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Lesson 12
Fractures of the Pelvis, Hip and Lower Extremities

Introduction

Fractures of the femur can result in severe blood loss. Fractures of the pelvis can result in injuries to internal organs with resultant blood loss and shock. Proper care of all fracture patients will improve their recovery time and minimize additional damage to injured tissues.

Objectives

At the conclusion of Lesson #12, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

—Demonstrate correct application proficiency in the use of the following splints:

—Sling and swathe
—Wire ladder splint
—Traction splint
—Airsplint-arm/leg
—Padded board
—Pneumatic counter pressure device
—Pillow splint
—Improvised splint

—Demonstrate proper immobilization techniques for fractures/dislocations of:

—clavicle
—humerus
—arm
—pelvis
—femur
—leg
—shoulder
—elbow
—wrist/hand
—hip
—knee
—foot

Overview Of Lesson Contents

Fractures Of The Pelvis

When the pelvis is fractured the patient complains of pain. Pain is felt when sides of the pelvis are compressed.

The patient should be transported on a long spine board, scoop stretcher or pneumatic counter pressure device.

Shock may result and must be treated since blood loss can be severe. There may be injuries to organs of the genitourinary system.

The Hip

Dislocations Of The Hip.

Anterior Dislocation. The thigh is stretched out from the side of the body, lies flat and is externally rotated away from the body.

Posterior Dislocation. The knee is typically drawn up and the thigh is rotated inward toward to body. The patient may be unable to raise his toes or his foot if the sciatic nerve has been damaged.

Emergency Care Procedures. The dislocated limb should be supported by pillows or rolled blankets and long straps. The patient should be transported on a rigid stretcher.

Fractures Of The Hip.

The patient will usually lie with the foot turned outward. The leg may appear to be shortened although there is sometimes no deformity.

Shock may result since blood loss can be severe.

Emergency Care Procedures. Application of traction splint. Adequate immobilization can be obtained by placing pillows or folded blankets between the legs and tying the legs together.

Pneumatic Counter Pressure Device. May be useful in the splinting of hip fractures.

Fractures Of The Shaft Of The Femur.

There is often marked deformity. The leg below the fracture will be severely angulated or rotated. Fractures are often open.

Shock may develop as there will be a large blood loss whether the fracture is open or closed. Circulation in the foot may be impaired.

Emergency Care Procedures. The leg should be gently straightened and immobilized with a traction splint.

Injuries About The Knee.

With a sprain swelling, tenderness and loss of function may be apparent. The leg should be gently straightened and a long-leg rigid splint applied. All suspected sprains should be splinted with a long-leg rigid splint or air splint.

With A Dislocation. Deformity is grotesque. Circulation in the foot may be impaired. The deformity should be straightened. The leg should be immobilized with a traction splint (no traction), a rigid long-leg splint, an air splint, or pillow or blanket splint.

The EMT should never force a deformity straight and should never straighten a deformity if it causes increased pain to the patient.

With Fractures. There is usually much pain and swelling and there may be significant deformity. Circulation in the foot may be impaired. The deformity should be gently straightened, and a splint applied as for dislocations.

In Dislocation Of The Patella the knee is usually flexed and the patella is displaced laterally. The leg should be gently straightened. The leg should be immobilized in a long-leg splint or air splint.

Fractures Of The Tibia Or Fibula Shaft.

The leg may be severely deformed. Fractures of the tibia are frequently open. Circulation in the foot may be impaired. The deformity should be gently straightened. A traction splint, long-leg rigid splint or air splint may be applied.

Injuries About The Ankle.

There may be severe deformity. It will probably not be possible to differentiate between a dislocation and a fracture. Deformities should be gently straightened. A long- or short-leg rigid splint, air splint or pillow splint should be applied.

Fractures Of The Foot.

There is usually pain and swelling. A spine injury should be suspected if heel pain is associated with back pain, or a fall from heights. The foot should be immobilized in a rigid short-leg splint, air splint or pillow splint.

Study Suggestions

1. Working with a classmate, or alone, as appropriate, practice immobilizing the following fractures and dislocations. Use a classmate or friend as a "patient". When rigid splints are required, improvise if you do not have splints available. Be sure to pad all splints adequately.

Fracture of the hip.
Fracture of the femur.
Dislocation of the knee.
Fracture of the tibia.
Fracture of the ankle.

2. Review the signs of fractures and dislocations of the pelvis, hip and lower extremity and be prepared to identify each from an illustration or simulation.

Lesson 12

FRACTURES OF LOWER EXTREMITIES

At the completion of this lesson, you should be able to define and use the following terms correctly.

Distal

Immobilization

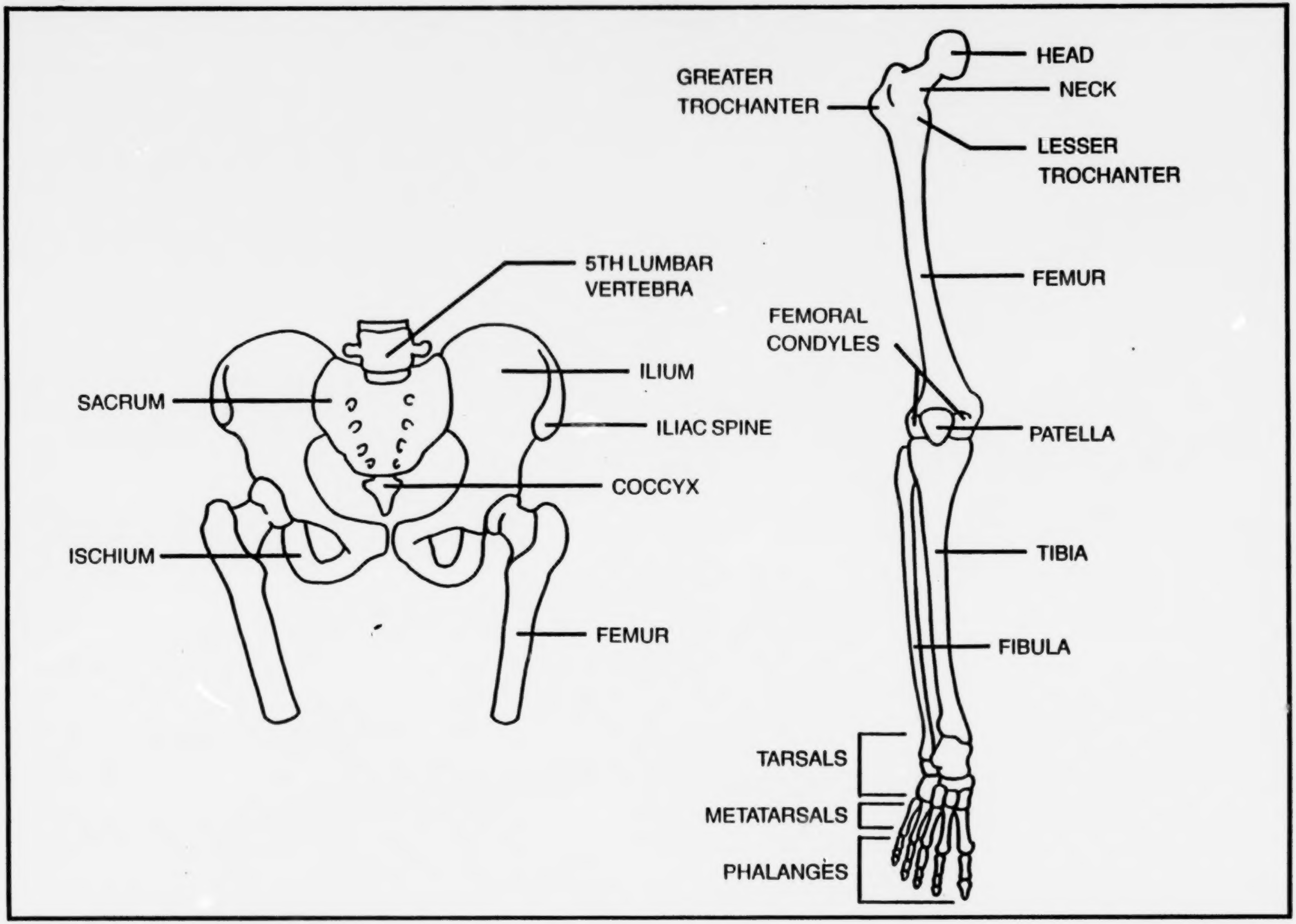
Localized pain

Patella

Pelvic girdle

Proximal

Shaft


HEAD
GREATER TROCHANTER
NECK
LESSER TROCHANTER
5TH LUMBAR VERTEBRA
FEMUR
FEMORAL CONDYLES
SACRUM
ILIUM
ILIAC SPINE
PATELLA
COCCYX
ISCHIUM
TIBIA
FEMUR
FIBULA
TARSALS
METATARSALS
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***See page 173,174, AAOS Text**

Lesson 13
Practical Lab: Fracture Care of the Upper and Lower Extremities

Introduction

This lesson is designed to provide you with the opportunity to attain proficiency on all practical skills covered in the two previous lessons. Proper care of fractures will reduce pain and suffering of patients and prevent further injury.

Objectives

At the conclusion of Lesson #13, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Demonstrate the correct application of the following splints:
    - —Sling and swathe
    - —Wire ladder splint
    - —Traction splint
    - —Airsplint—arm/leg
    - —Padded board
    - —Pneumatic Counter Pressure Device
    - —Pillow splint
    - —Improvised splint
- Demonstrate proper immobilization techniques for fractures/dislocations of:
    - —Clavicle
    - —Humerus
    - —Arm
    - —Pelvis
    - —Femur
    - —Leg
    - —Shoulder
    - —Elbow
    - —Wrist/hand
    - —Hip
    - —Knee
    - —Foot

Study Suggestions

1. Working with classmates, practice the use of:
    - Sling and swathe.
    - Wire ladder splint.
    - Traction splint.
    - Air splint—Arm/leg.
    - Padded board splint.
    - Pneumatic Counter Pressure Device.
    - Pillow splint.
    - Cardboard splint.
2. Complete a primary and secondary survey on a simulated patient and identify simulated fractures.
3. List the signs and symptoms of fractures, dislocations and sprains.

Lesson 14
Injuries of the Head, Face, Eye, Neck and Spine

Introduction

Head injuries can result in brain damage, spine injuries in paralysis, and face and neck injuries in severe airway difficulties. It is especially important that the rescuer be knowledgeable about the signs, seriousness and management of these patients. The lesson includes student practice in immobilizing patients with suspected spine injuries on both short and long backboards.

Objectives

At the conclusion of Lesson #14, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Describe how brain is protected from injury.
- List functions of central nervous system.
- List functions of peripheral nervous system.
- List functions of autonomic nervous system.
- State function of cerebrospinal fluid.
- List 4 types of brain injury and how they occur.
- List 3 types of intracranial hematoma and how they occur.
- List 5 signs/symptoms of possible brain injury.
- List 3 signs/symptoms of possible skull fracture.
- Describe treatment for blood and/or cerebrospinal fluid loss of nose/ears.
- List steps in emergency care for patient with suspected skull fracture.
- Describe treatment for suspected brain injury.
- List steps in emergency care for soft tissue neck/facial injury.
- List 6 signs/symptoms of suspected neck/spine injury.
- Demonstrate how to open airway in patient with suspected neck injury.
- Demonstrate how to evaluate conscious patient with suspected spinal injury.
- Demonstrate how to evaluate unconscious patient with suspected spinal injury.
- List 3 situations when a spinal injury should be suspected.
- Demonstrate proper cervical traction.
- Demonstrate proper application of 3 (1 improvised) cervical immobilization devices.
- Demonstrate proper short spine board immobilization technique.
- List steps in proper spinal cord injury management.
- Demonstrate 4 person lift for patient with suspected spinal injury.
- Demonstrate 4 person log roll for patient with suspected spinal injury.
- Demonstrate proper application of long spine board.
- Demonstrate how to "package" a patient with a suspected spinal injury to ensure no movement with board turned/tipped.
- Demonstrate proper helmet removal techniques.
- List three instances when a short spine board should be used.
- List 7 anatomical structures of the eye and describe the function of each.
- List the possible normal/abnormal pupil reactions/size.
- Describe the treatment for chemical burns of the eye.
- Describe the treatment for thermal burns of the eye (lid).
- Describe the treatment for light burns of the eye.
- Demonstrate the proper bandaging technique for an eye with an impaled object.
- Describe treatment for a lacerated eyelid or eyeball.
- Describe special considerations for patients with contact lenses.

Overview Of Lesson Contents

The Nervous System consists of the brain, spinal cord, and nerves.

The Brain is the controlling organ of the body and the center of consciousness. It occupies the entire space within the cranium. Each type of brain cell has a specific function and certain parts of the brain perform certain functions.

The Spinal Cord consists of long tracts of nerves that join the brain with all body organs and parts and is protected by the spinal column.

Sensory nerves send information to the brain on what the different parts of the body are doing relative to their surroundings.

Motor nerves emanate from the brain and result in stimulation of a muscle or organ.

Injuries To The Spine

It is especially important to provide proper care for patients with suspected spinal injuries since damage to the spinal cord can result in paralysis or death.

All unconscious accident patients should be treated as if they had spinal injuries and all conscious patients should be carefully checked for spine injuries prior to movement.

Accident patients with weakness or numbness of arms or legs must be assumed to have spine injuries.

The following signs may be indicative of spinal cord injury:

Pain. The patient may be aware of pain in the area of injury.

Tenderness. Gently touching the suspected area may result in increased pain.

Painful Movement. If the patient tries to move, the pain may increase—never try to move the injured area or the patient.

Deformity. Deformity is rare although there may be an abnormal bend or bony prominence.

Cuts And Bruises. Patients with neck fractures will have cuts and bruises on the head or face. Patients with injuries in other spine areas will have bruises on the shoulders, back or abdomen.

Paralysis. If the patient is unable to move or feels no sensation in some part of his body, he may have a spinal fracture.

Steps For Checking Signs And Symptoms

In Conscious Patients Procedures Are:

Ask—what happened, where does it hurt, can you move your hands or feet, can you feel me touching your hands (feet)?

Look—for bruises, cuts, deformities.

Feel—for areas of tenderness, deformities.

Have Patient Move—if he can do so comfortably.

In Unconscious Patients Procedures Are:

Look—for cuts, bruises, deformities.

Feel—for deformities.

Ask Others—what happened?

Complications Of Spine Injury

Persons with neck injuries may have paralyzed chest muscles. Breathing can then be accomplished only by the diaphragm. Inadequate breathing and shock may result.

Paralysis of the nerves affecting the size of blood vessels may occur and shock may result.

Emergency Care Procedures For Spine Injury

In addition to caring for life-threatening problems, the most important consideration for a victim with a suspected spine injury is to immobilize him BEFORE moving.

Unless it is necessary to change a patient's position to maintain an open airway or there is some other compelling reason, it is best to splint the neck or back in the original position of deformity.

Patients with suspected spine injuries will require immobilization on a spine board or other device.

A helmet should be removed unless there is difficulty in removing it, or increased pain. In such instances, the patient should be immobilized on the spine board with the helmet in place.

Injuries To The Skull And Brain.

Fractures of the skull are common in accident victims. Their seriousness depends on the amount of injury to the brain. Serious brain injury is much more common when there is not skull fracture.

Skull fractures may be open or closed. They may also be:

- **Linear**
- **Comminuted**
- **Depressed**
- **Penetrated Skull**
- **Or Basal**

The brain and spinal cord are protected by layers of tissue filled with a liquid called cerebrospinal fluid which may drain from the ears or nose in the event of skull fractures. Do NOT attempt to stop bleeding from the nose or ears when a skull fracture is suspected.

Signs of a skull fracture include:

Deformity of the skull.
Blood or clear fluid (cerebrospinal fluid) draining from ears or nose.
Black eyes.

A **Concussion** is a temporary loss of function for some or all of the brain; signs are:

Patient may be confused or staggering or become totally unconcious.
Patient may have some loss of memory for events surrounding the accident.

A **Contusion** is bleeding and abnormal swelling of brain tissue; signs are:

Patient may lose consciousness.
Paralysis may be present.
One pupil may dilate.
Vital signs may progressively deteriorate.

A **Cerebral Hematoma** is caused by blood clots causing pressure on brain tissues. Signs are the same as those for contusions.

Care for patients with suspected head injuries require management of the injury as well as repeated evaluation over time. Procedures are:

Correct life-threatening problems—maintain respiration and circulation.
Suspect a cervical or other spine injury in vehicular accidents and falls.
Control bleeding—not drainage.
Dress and bandage open wounds—minimize pressure.
Position according to associated injuries:
Protect patient from hurting himself if he convulses.

Monitoring The Unconscious Patient

Unconscious patients need special management and constant evaluation from contact to delivery at the medical facility.

First and foremost is airway support. The semi-prone position should improve breathing

Serious Bleeding Must Be Controlled.

Cervical Spine Injury must be assumed and immobilizations must be completed for any unconscious trauma patients.

Accurate recording of vital signs including level of consciousness is necessary to provide baseline data.

Injuries To The Face And Neck

The face and scalp are richly supplied with arteries and veins and wounds of these areas bleed heavily.

Control by direct pressure. For cheek wounds, it may be necessary to hold a gauze pad inside the cheek as well as outside.

- Suspect brain or neck injuries for any wounds of the head.
- Check the mouth carefully for any loose objects, such as broken teeth that might impair the airway.
- Check carefully for bleeding into the mouth or throat that might impair the airway.
- Cover exposed nerves, tendons, or blood vessels with a moist bandage.

The main danger of facial features lies in airway problems. Bone fragments and blood may obstruct the airway—check the airway carefully.

Emergency care is the same as for soft tissue injuries, that is, maintain the airway, control bleeding, and dress and bandage open wounds.

Emergency Care For Neck Wounds

Control arterial bleeding by direct pressure.

If a large vein is torn, apply pressure above and below the point of bleeding to prevent air from entering the circulatory system—the latter could be rapidly fatal.

Always suspect a cervical spine fracture.

For laryngeal and tracheal injury, the patient should be kept calm and breathing slowly. Oxygen should be administered. If breathing becomes increasingly more difficult, transport immediately as advanced airway care will be necessary.

Helmet Removal

May be necessary to properly immobilize or maintain airway; procedures are:

- Remove with caution.
- One EMT-A maintains in-line traction from below.
- The straps are loosened.
- A second EMT-A assumes traction.
- The first EMT-A removes helmet, spreading at the ears.
- The first EMT-A replaces traction with more stable and conventional methods.

The Eye is a globe.

Parts of the eye include:

- Vitreous humor.
- Iris.
- Pupil.
- Cornea.
- Sclera.
- Conjunctiva.
- Eyelids.
- Tear glands.

The Pupils Of The Eye Are Considered To Be A Vital Sign. Pupils can be:

- Dilated.
- Constricted.
- Unequal
- Fixed.

Signs of injuries to the eye include:

- Swollen or lacerated eyelids.
- Bloodshot eyes.
- Scratched cornea.

Small foreign bodies can be removed by a cotton-tipped applicator. Small bodies on the cornea should not be removed.

Impaled objects are not removed. The eye should be covered with a papercup/cone or eye shield and bandaged. Both eyes should be covered to minimize movement.

Chemical Burns of the eye are serious; they should be copiously flushed with water before bandaging.

In the case of **Burned Eyelids,** the eye should be covered with a sterile moist dressing.

For **Lacerations And Contusions**—pressure may be applied to control bleeding; do not apply pressure to the eyeball itself.

For an **Extruded Eyeball,** the eye should be gently covered with a moist dressing; do **Not** replace eyeball.

Study Suggestions

1. Practice immobilizing the neck with a cervical collar or blanket. Use a classmate or friend as a "patient".
2. Practice examining a conscious patient for spine injury. Use a classmate or friend as a "patient".
3. Describe how you would examine an unconscious patient for spine injury.
4. An unconscious patient is slumped over the steering wheel. He has multiple bruises about the face and blood is draining from his nose. Discuss what might be wrong with the patient, how you would examine him, and how you would care for him.
5. The unconscious motorcycle rider is lying on his back in the road. You have examined him, and in addition to a closed fracture of the fibula, he appears to have a cervical fracture. Describe how you would care for the patient.
6. In examining an unconscious victim with severe facial injuries, you note that the pupil of one eye is dilated. What might you suspect?
7. The unconscious patient has a fractured jaw. What would you check for and why?
8. Complete a neural watch chart on a simulated patient. Be prepared to discuss your patient and what the findings on the chart suggest.
9. The patient has multiple bruises about the face and neck, is having severe breathing difficulties and is unable to speak. What might you suspect is wrong with the patient and what would you do to care for him?
10. Practice dressing and bandaging an eye with an extruded eyeball. Use a classmate or friend as a "patient".
11. Practice removing a helmet without moving the cervical spine.

Lesson 14

INJURIES TO HEAD, FACE, EYE, NECK AND SPINE

At the completion of this lesson, you should be able to define and use the following terms correctly.

Amnesia

Concussion

Contusion

Convulsion

Deformity

Depressed fracture

Diaphragmatic breathing

Equilibrium

Hematoma

Impaired

Paralysis

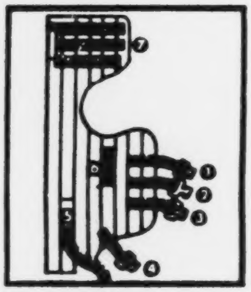
Priapism

Information and Instructions For Use of K.E.D.

KENDRICK EXTRICATION DEVICE

(A) The **K.E.D.** is a primary device of extrication equipment. The **K.E.D.** is used most often for removal from vehicles of sitting patient s with cervical spine injuries. It is also useful in removing patients in awkward positions from confined spaces.

(B) Following application of a cervical collar (Fig. 1) the **K.E.D.** is positioned behind the sitting patient by sliding the body portion of the **K.E.D.** (smooth side toward the patient) far enough so that when the device is tipped upright, the head portion clears the top edge of the doorway. Patient is centered within the **K.E.D.** (Fig. 2) An alternate method is to slide the **K.E.D.** behind the patient from the opposite side of the vehicle.



CHEST STRAPS 1 - TOP - 2 - MIDDLE 3 - BOTTOM
4 - LEG STRAP FASTENER
5 - LEG STRAP
6 - ARMPIT HANDLE
7 - 1" VELCRO FASTENERS

(C) The legs straps are pulled down and clear of the device at this time. It is important to pull the **K.E.D.** up snuggly under the patient's armpits so that the weight of the patient is suspended and there is no sagging downward when the patient is lifted.

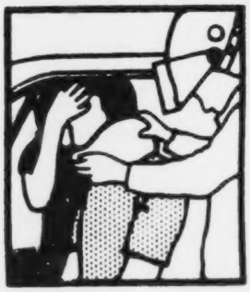


FIG. 1

(D) The bottom chest strap is fastened first and snugged up. The middle chest strap is fastened next and snugged up. THE TOP CHEST STRAP REMAINS UNFASTENED AT THIS POINT.

(E) The leg straps are passed UNDER the patient's, legs, crossed at the crotch and connected to the fastener on the opposite side of the device. (Fig. 3a). Leg straps are snugged up at this point. (In the event of a groin injury, the straps may be passed AROUND the legs and attached to the same sides as straps originated.) (Fig. 3b).

(F) The patient's head is secured to the **K.E.D.** by the use of Velcro head and chin straps. The top chest strap should be fastened and snugged at this point. All other straps should be checked for snugness.

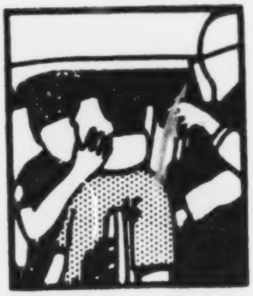


FIG. 2

(G) The patient may now be lifted out of the vehicle by two attendants grasping the handles of the device under the patient's armpits with one hand while locking their other hands high under the patient's thighs. (Fig. 4) When patient is removed, release tension on the top chest strap for more comfortable breathing.

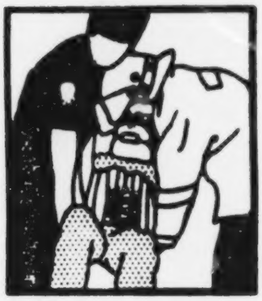


FIG 4

(H) Emergency medical technicians with their basic knowledge are expected to use ingenuity and common sense to make the **K.E.D.** fit the occasion, as few accidents or patient positions are exactly alike.

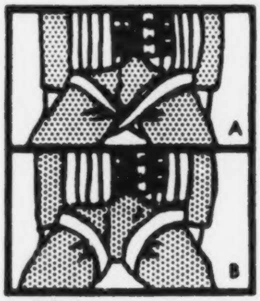


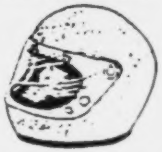
FIG. 3

MEDI ✱ KED
MEDI * KED, INC.
8402 N. MAGNOLIA, SUITE I • SANTEE, CA. • 92071 • (714) 449-7264

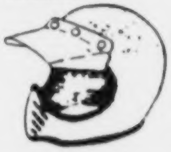
Helmet Removal from Injured Patients

Types of Helmets

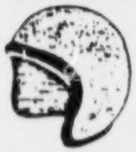
Full face coverage—
motorcycle, auto racer



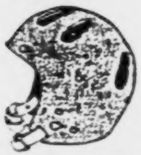
Full face coverage—
motocross



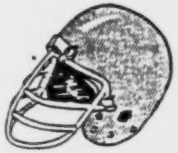
Partial face coverage—
motorcycle, auto racer



Light head protection—
bicycle, kayak

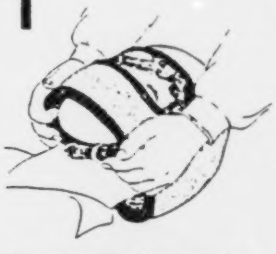


Football



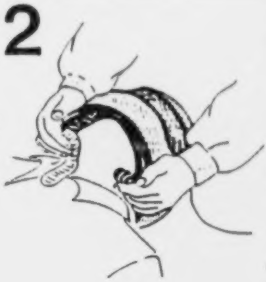
Helmet Removal

1



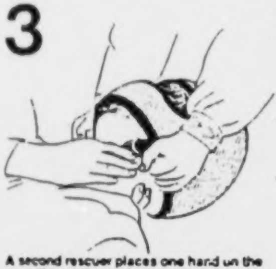
One rescuer applies inline traction by placing his or her hands on each side of the helmet with the fingers on the victim's mandible. This position prevents slippage if the strap is loose.

2



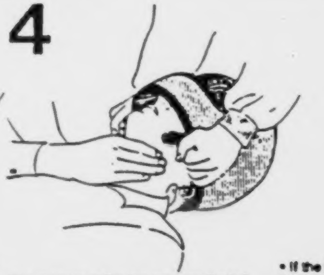
The rescuer cuts or loosens the strap at the D-rings while maintaining inline traction.

3



A second rescuer places one hand on the mandible at the angle, the thumb on one side, the long and index fingers on the other. With his other hand, he applies pressure from the occipital region. This maneuver transfers the inline traction responsibility to the second rescuer.

4



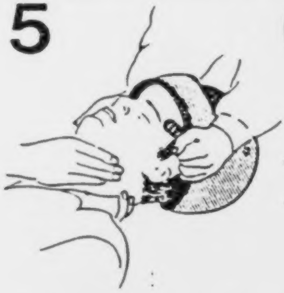
The rescuer at the top removes the helmet. Three factors should be kept in mind:

- The helmet is egg-shaped, and therefore must be expanded laterally to clear the ears.
- If the helmet provides full facial coverage, glasses must be removed first.
- If the helmet provides full facial coverage, the nose will impede removal. To clear the nose, the helmet must be tilted backward and raised over it.

The varying sizes, shapes, and configurations of motorcycle helmets necessitate some understanding of their proper removal from victims of motorcycle accidents. The rescuer who removes a helmet improperly might inadvertently aggravate cervical spine injuries.

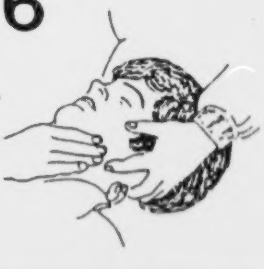
The Committee on Trauma believes that physicians who treat the injured should be aware of helmet removal techniques. A gradual increase in the use of helmets is anticipated because many organizations are urging voluntary wearing of helmets, and some states are reinstating their laws requiring the wearing of helmets.

5



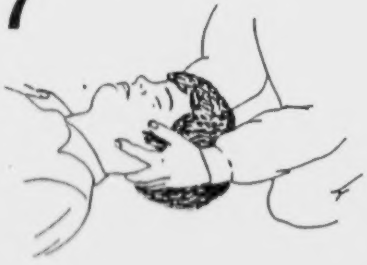
Throughout the removal process, the second rescuer maintains inline traction from below in order to prevent head tilt.

6



After the helmet has been removed, the rescuer at the top replaces his hands on either side of the victim's head with his palms over the ears.

7



Inline traction is maintained from above until a backboard is in place.

Summary

The helmet must be maneuvered over the nose and ears while the head and neck are held rigid.

- Inline traction is applied from above.
- Inline traction is transferred below with pressure on the jaw and occiput.
- The helmet is removed.
- Inline traction is re-established from above.

American College of Surgeons
Committee on Trauma
July 1980

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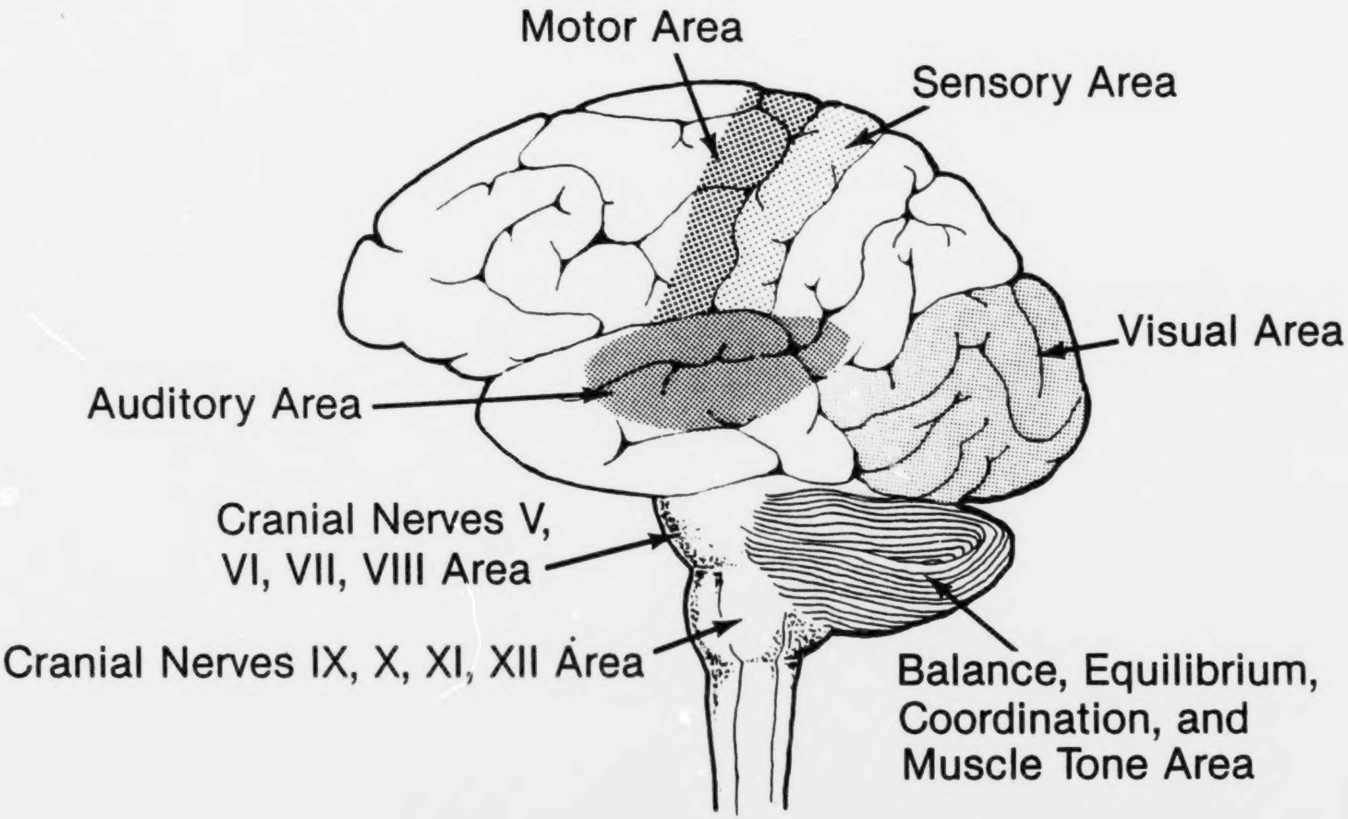
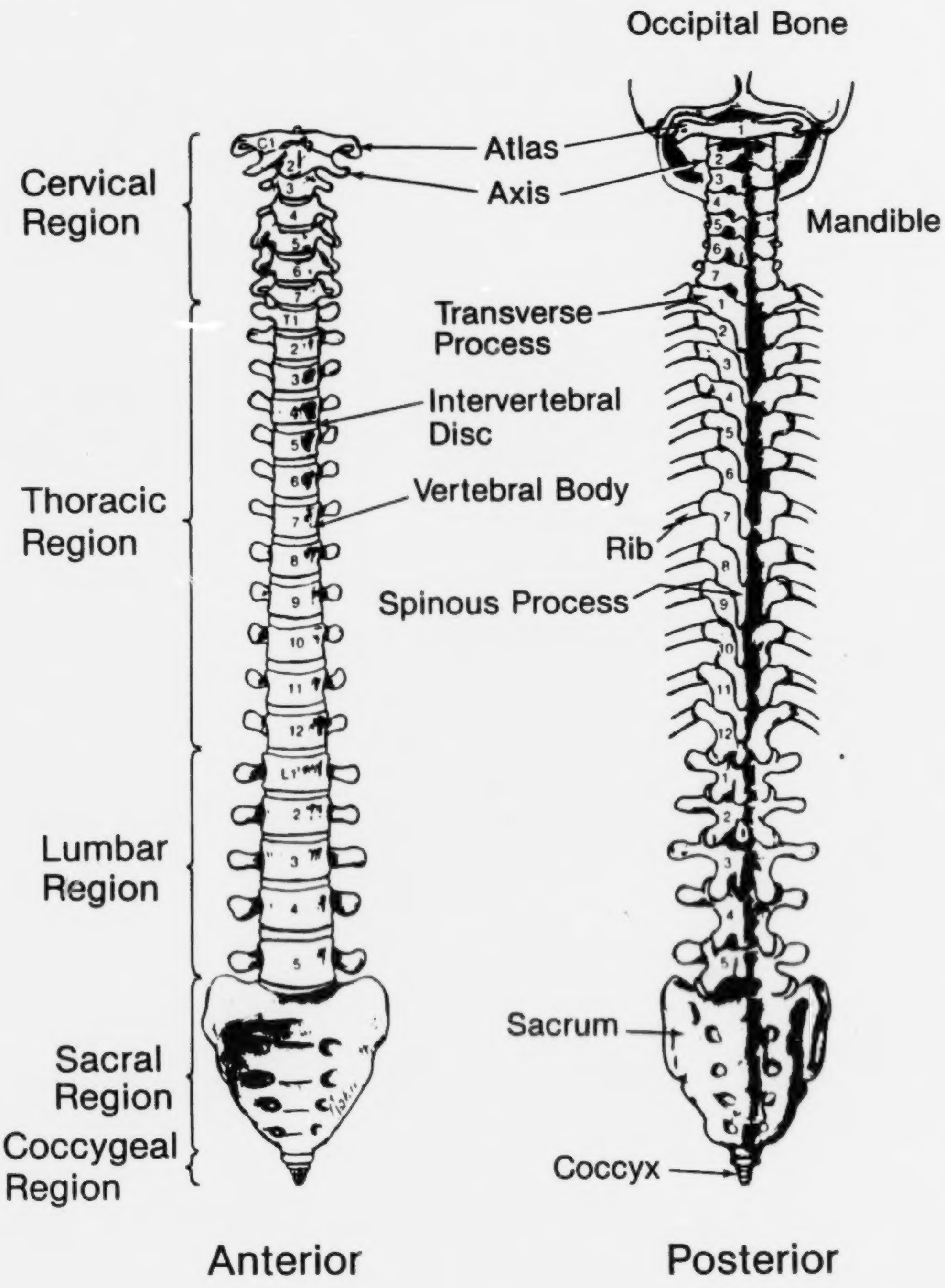
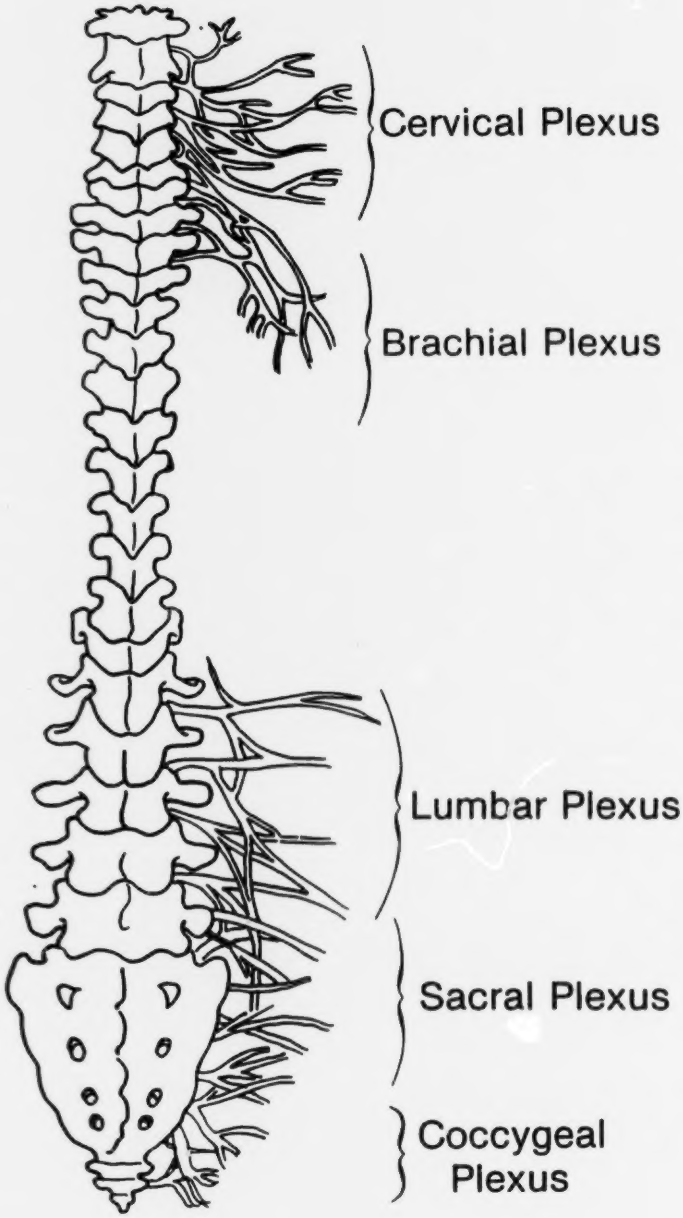
Functional Areas of the Brain


Motor Area
Sensory Area
Visual Area
Auditory Area
Cranial Nerves V, VI, VII, VIII Area
Cranial Nerves IX, X, XI, XII Area
Balance, Equilibrium, Coordination, and Muscle Tone Area

The Vertebral Column


Occipital Bone
Atlas
Axis
Cervical Region
Mandible
Transverse Process
Intervertebral Disc
Vertebral Body
Thoracic Region
Rib
Spinous Process
Lumbar Region
Sacrum
Sacral Region
Coccygeal Region
Coccyx
C1
T1
L1
Anterior
Posterior

Plexuses of the Central Nervous System


Cervical Plexus
Brachial Plexus
Lumbar Plexus
Sacral Plexus
Coccygeal Plexus

Lesson 15 Practical Lab: Patient Assessment and Spine Immobilization

Introduction

Proficiency at spine immobilization is critical to prevent paralysis or death in victims of trauma. The skills required are difficult and must be practiced frequently.

Objectives

At the conclusion of Lesson #15, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Demonstrate primary/secondary survey in both conscious and unconscious patient (to include neurocheck).
- Demonstrate how to open airway in patient with suspected neck injury.
- Demonstrate how to evaluate the neurological status of a conscious patient with a suspected spinal injury.
- Demonstrate how to evaluate the neurological status of an unconscious patient with suspected spinal injury.
- Demonstrate manual cervical traction.
- Demonstrate the application of 3 (1 improvised) cervical immobilization devices.
- Demonstrate short spine board immobilization techniques.
- List steps in spinal cord injury management.
- Demonstrate 4 person lift for patient with suspected spinal injury.
- Demonstrate 4 person log roll for patient with suspected spinal injury.
- Demonstrate the application of a long spine board.
- Demonstrate how to "package" a patient with a suspected spinal injury to ensure no movement when turned/tipped.
- Demonstrate helmet removal techniques.
- Demonstrate proper application techniques of spinal immobilization including: immobilization with chin strap, immobilization of joint above and below fracture and immobilization of body prior to head and neck.

Study Suggestions

1. Working with classmates, practice:

   Manual cervical traction.

   The application of cervical immobilization devices, including: Short spine board immobilization techniques. 4 person log roll for patient with suspected spine injury. The application of a long spine board. Packaging a patient so board can be turned onto side. Helmet removal techniques.
2. Complete a primary and secondary survey on one or more simulated patients and:

   Demonstrate opening an airway when neck injuries are suspected.

   Evaluate neurological status of a conscious and unconscious patient with suspected spinal injury.

Lesson 16
Injuries to the Chest, Abdomen and Genitalia

Introduction

Injuries to the chest and abdomen can be life-threatening if internal organs are injured. Recognizing the potential seriousness of these injuries and providing appropriate care can make the patient more comfortable, minimize the extent of damage, and possibly save his life. In addition to knowledge of causes, signs, dangers and techniques of care for injuries to these body parts, the lesson includes practice in dressing and bandaging chest wounds as well as practice in performing a complete patient examination.

Objectives

At the conclusion of Lesson #16, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List the boundaries of the (thoracic) chest cavity.
- List the contents of the chest (thoracic) cavity.
- List the 2 classifications of chest injuries.
- List 4 signs/symptoms and describe emergency treatment for:
  - —pneumothorax
  - —hemothorax
  - —tension pneumothorax
  - —pericardial tamponade
  - —flail chest
  - —subcutaneous emphysema
  - —open pneumothorax (sucking chest wounds)
  - —traumatic asphyxia
- List the boundaries of the abdominal cavity.
- List the contents of the abdominal cavity.
- Describe complications/implications arising from injury to each abdominal organ.
- List 10 possible signs/symptoms of abdominal injury.
- Demonstrate assessment of patient with abdominal injury.
- Describe care of patient with abdominal evisceration.
- Describe care of patient with impaled object in abdomen.
- Describe care of patient with blunt abdominal injury.
- List the components of the external male genitalia.
- List the components of the external female genitalia.
- Describe emergency care of injuries to external male genitalia.
- Describe emergency care of injuries to external female genitalia.
- List local procedures for dealing with sexual assault victims.

Overview Of Lesson Contents

The Chest

The rib cage includes the ribs, the thoracic vertebrae, and the sternum.

The ribs are connected to the vertebrae in back and all but two are connected to the sternum in front by cartilage.

The rib cage encloses the lungs and heart, and damage to the ribs can result in damage to these organs.

Injuries

Signs of chest injuries:

Pain at the site of injury.

Pain with breathing.

Dyspnea.

Failure of one or both sides of chest to expand normally with inspiration.

Coughing up blood.

Rapid weak pulse and low blood pressure.

Cyanosis.

General Principles Of Care include control of bleeding and maintaining breathing and adequate oxygenation.

Types Of Injuries. Injuries to the chest include rib fractures, penetrating injuries, and injuries to the internal chest organs (heart and lungs). All, of course, may occur together.

Rib Fractures

A common finding of rib fracture is localized pain.

Simple fractures should not be bound, strapped or taped, although:

With multiple fractures, the patient may be more comfortable with the arm strapped to the chest with a swathe.

A **Flail Chest** occurs when each of three or more ribs is broken in two places, the resultant portion will not move with the rest of the rib cage when the patient attempts to breathe. Immobilizing the ribs may improve respirations.

Penetrating Wounds consist of open chest wounds in which the chest wall is torn—typically by a foreign object.

The wound must be closed quickly since it can result in air outside the lung in the chest cavity.

Compression Injuries can increase intrathoracic pressure, cause rib fractures, a flail chest, and traumatic asphyxia.

Chest injuries may result in the following conditions:

Pneumothorax—air enters the chest cavity through a sucking wound or leaks from a lacerated lung. The lung cannot expand.

Spontaneous Pneumothorax—air leaks into the chest from a congenitally weak area in the lung surface and the lung collapses.

Tension Pneumothorax—air continuously leaks out and the lung collapses completely. Pressure rises and the collapsed lung is forced against the heart and other lung. Release of a bandage on a chest wound may be effective in releasing tension.

Hemothorax—blood leaks into the chest cavity from lacerated vessels or the lung itself and the lung compresses.

Open Pneumothorax—air enters the chest cavity through an open wound. The wound must be closed immediately with an air-tight dressing. Aluminim foil, plastic wrap or any dressing may be used.

Subcutaneous Emphysema—a fractured rib has pierced a lung. A crackling sensation is felt under the fingertips as one feels over the area of the fracture.

Traumatic Asphyxia—severe compression puts pressure on heart and forces blood back into veins of the neck. It may also cause severe lung damage. This is a severe emergency.

Pericardial Tamponade—blood or other fluid in the pericardial sac outside the heart exerts pressure on the heart.

Lacerations Of The Great Vessels—a major blood vessel is torn.

Traumatic Emphysema—a sudden compression injury occurs when the glottis is closed; air sacs are ruptured and leak air.

The Abdomen And Genitalia

The Contents Of The Abdominal Cavity Include: major organs of digestion, excretion, female reproduction.

The **Digestive System** is composed of the following parts:

Mouth
Salivary glands
Pharynx
Esophagus
Stomach
Gallbladder and bile ducts
Small intestine
Large intestine
Appendix
Rectum and anus
Pancreas
Liver
Spleen

The Urinary System Consists Of The Following:

- Kidneys
- Ureter
- Urinary bladder and urethra

The Male Reproductive organs are:

- Testicles.
- Vasa deferentia.
- Seminal vesicles
- Prostate gland.
- Urethra
- Penis

The Reproductive organs of the Female are:

- Ovaries
- Fallopian tubes
- Uterus
- Vagina

Injuries To The Abdomen may be open or closed.

The abdomen contains both hollow and solid organs and may result in peritonitis or serious bleeding.

The Signs of abdominal injury include:

- Patient will be still, usually with legs drawn up.
- Breathing will be rapid and shallow.
- Skin wounds and penetrations may be evident.
- Pulse may be rapid and blood pressure low.
- Patient may be nauseated and may vomit.
- Organs may protrude.
- Fractures may be evident.
- There may be blood in the urine.

Emergency Care For Abdominal Injuries

- Suspect shock and work to prevent it. Pneumatic Counter Pressure Devices may be required.
- Constantly monitor and evaluate vital signs.
- Be alert for vomitus.
- Do not remove impaled objects.
- Do not touch protruding organs. Cover them with a sterile dressing and keep the dressing moist or apply an occlusive dressing.

Injuries To External Male Genitalia may be bruises, lacerations, penetrating objects and avulsions.

Emergency care rules are essentially the same as those for all other bodily injuries.

Injuries To Internal Female Genitalia are rarely seen except in the pregnant female. Blunt injuries may rupture the uterus, cause loss of life of the fetus and severe hemorrhage.

Injuries To External Female Genitalia. The types and care for these injuries are similar to those of injuries to other body parts and emergency care is the same. Nothing should be placed in the vagina.

Study Suggestions

1. Practice dressing and bandaging a sucking chest wound. Use a classmate or friend as a "patient".
2. The patient has a knife in his chest. Describe how you would manage this patient and what you would watch for. Describe ALL POSSIBLE complications.
3. You suspect the patient has internal abdominal injuries. Describe the patient and what made you come to this conclusion.
4. As you approach the scene, you see a rescuer attempting to replace a patient's protruding intestine. What would you do and why?
5. Review the procedures for the application of Pneumatic Counter Pressure Devices.

Lesson 16

INJURIES TO CHEST, ABDOMEN, AND GENITALIA

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Apnea

Asphyxia

Evisceration

Flail chest

Hemoptysis

Hemothorax

Hypoxia

Mediatium

Paraodixal respiration

Pericardial sac

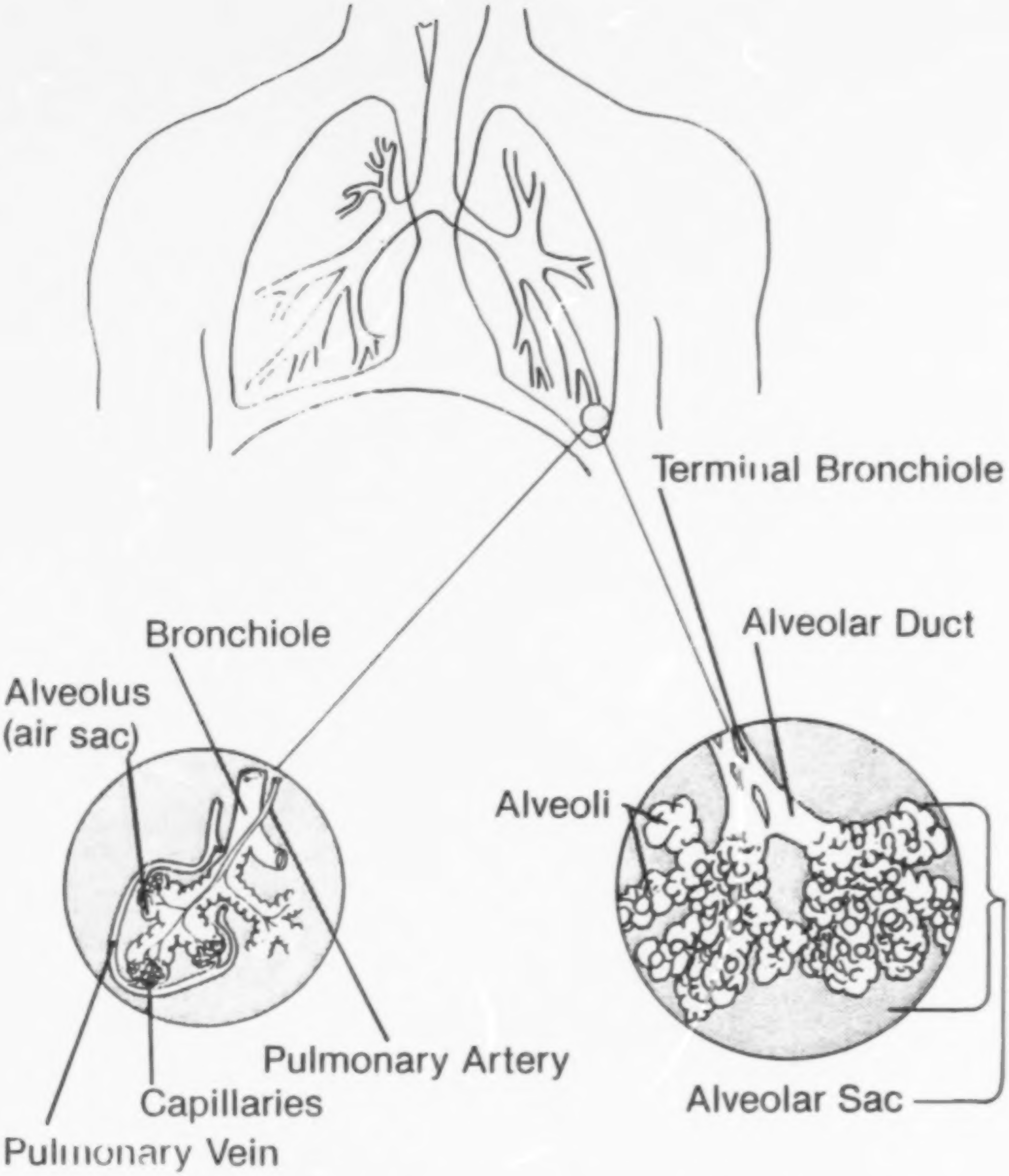
Peritoneum

Pleuritic pain

Pneumothorax

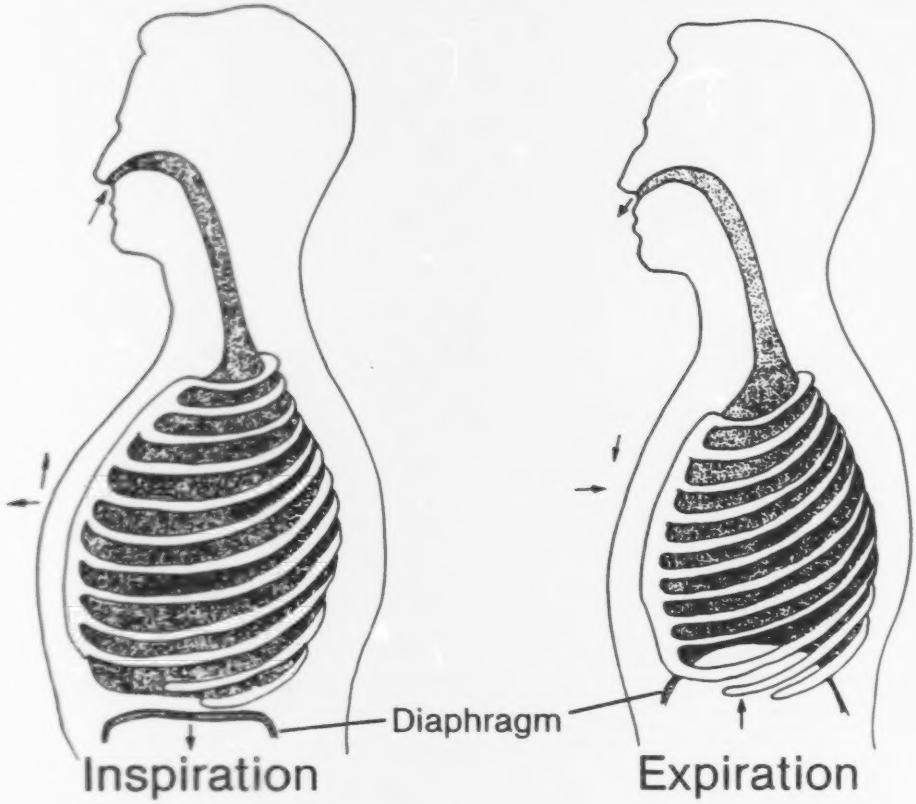
Rape

Alveoli


Terminal Bronchiole
Bronchiole
Alveolar Duct
Alveolus
(air sac)
Alveoli
Pulmonary Artery
Capillaries
Alveolar Sac
Pulmonary Vein

Enlarged Sections of the Lung

Process of Breathing


Diaphragm
Inspiration
Expiration

Lesson 17
Practical Lab: Injuries

Introduction

Techniques of wound care require practice to gain proficiency. Likewise continuous review and practice of principles of spine immobilization is necessary to retain skill levels. Fracture care may reduce suffering and prevent additional damage. One or more of these skills are used on almost every trauma patient.

Objectives

At the conclusion of Lesson #17, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to any or all of the following:

- Demonstrate the bandaging technique for an eye with an impaled object.
- Demonstrate bandaging techniques for scalp lacerations on top/side of head.
- Demonstrate how to open airway in patient with suspected neck injury.
- Demonstrate how to evaluate conscious patient with suspected spinal injury.
- Demonstrate proper cervical traction.
- Demonstrate proper application of 3 (1 improvised) cervical immobilization devices.
- Demonstrate proper short spine board immobilization technique.
- List steps in proper spinal cord injury management.
- Demonstrate 4 person lift for patient with suspected spinal injury.
- Demonstrate 4 person log roll for patient with suspected spinal injury.
- Demonstrate proper application of long spine board.
- Demonstrate how to "package" a patient with a suspected spinal injury to ensure no movement when turned/tipped.
- Demonstrate proper helmet removal techniques.
- Demonstrate primary/secondary survey in both conscious and unconscious patients.
- Demonstrate proper application of Military Anti-Shock Trousers (MAST) or pneumatic counter pressure device. (PCPD).
- Demonstrate application proficiency in use of the following splints:
  - —Sling and swathe
  - —Wire ladder splint
  - —Traction splint
  - —Air splint arm/leg
  - —Padded board-pneumatic counter pressure device
  - —Pillow splint
  - —Improvised splint
- Demonstrate bandaging techniques for chest wounds.
- Demonstrate bandaging techniques of abdominal eviscerations.
- Demonstrate immobilization techniques for fractures/dislocations of:
  - —Clavicle
  - —Shoulder
  - —Humerus
  - —Elbow
  - —Arm
  - —Wrist/hand
  - —Pelvis
  - —Hip
  - —Femur
  - —Knee
  - —Leg
  - —Foot

Study Suggestions

1. Working with classmates, complete a primary and secondary survey, identifying and treating all injuries.
2. Review procedures for splinting upper and lower extremities.
3. With classmates, practice splinting a variety of immobilization procedures for fractures of the upper extremities, lower extremities and spinal column.

Lesson 18
Test and Evaluation: Injuries

Introduction

This lesson provides for interim evaluation of student knowledge and skills. Each student completes a written examination designed to evaluate attainment of knowledge objectives specified for Lessons 9 through 17. Each student performs each skill taught in Lessons 9 through 17 for an instructor and is evaluated on his performance.

Objectives

At the conclusion of Lesson #18, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- Demonstrate mastery of knowledge objectives in Lessons 9, 10, 11, 12, 14 and 16 by achieving a score of 70% or higher on written test.
- Demonstrate knowledge of practical skills by performing selected representative skill objectives in Lessons 9, 10, 11, 12, 14 and 16.

Note: Lessons 13, 15 and 17 are not included as they are practice sessions where objectives are restated from previous lessons.

Study Suggestions

1. Review all material contained in Lessons 9 through 17.

Lesson 19
Medical Emergencies I

Introduction

This lesson covers common medical emergencies including ingested and inhaled poisons, bites and stings, heart attack, stroke and dyspnea. Severe cases can be life-threatening. The EMT-A should be able to recognize these conditions and render appropriate emergency care. The lesson also includes a review of results of the written and practical examinations administered in the previous two lessons and provides an opportunity for students to practice as needed the skill of cardiopulmonary resuscitation and use of mechanical aids to airway care and resuscitation.

Objectives

At the conclusion of Lesson #19, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- Define poison.
- List 4 ways for poison to enter body and give 2 examples of each.
- State how to contact nearest poison control center.
- List 7 signs/symptoms of poisoning.
- List the immediate steps in emergency care of poisoned patient.
- List 3 circumstances when vomiting should NOT be induced in patients suffering from ingested poison.
- State how to induce vomiting in adult patient.
- State how to induce vomiting in a child.
- State emergency care of unconscious victim of poisoning.
- List emergency care for victims of inhaled poison.
- List emergency care for victims of injected poison.
- List emergency care for victims of absorbed poison.
- List 5 signs/symptoms of patient suffering allergic reaction to an insect sting.
- State emergency care for same patient suffering allergic reaction to an insect sting.
- State physical characteristics of a pit viper and a coral snake.
- List 4 signs/symptoms of patient bitten by pit viper.
- List 4 signs/symptoms of patient bitten by coral snake.
- List emergency care for snake bites.
- List 3 examples of stinging marine animals.
- Describe emergency care for marine animal stings.
- List 3 examples of marine animals that can cause puncture wounds.
- Describe emergency care for puncture wounds from marine animals.
- Define atherosclerosis.
- Define Myocardial Infarction.
- List 4 risk factors associated with heart disease.
- List 3 causes of heart attack.
- Define angina pectoris.
- List signs/symptoms of angina.
- List signs/symptoms of heart attack.
- List the emergency care/treatment for angina.
- List the emergency care/treatment for MI.
- Define chronic congestive heart failure.
- List signs/symptoms of congestive heart failure.
- State the emergency care for congestive heart failure.
- Define stroke.
- List 3 causes of stroke.
- List 7 signs/symptoms of stroke.

- Describe steps in treatment of stroke patients.
- List special considerations for treatment of stroke/patients.
- Define dyspnea.
- Define pulmonary edema.
- Define chronic obstructive pulmonary disease.
- List 3 non-traumatic causes of dyspnea.
- List signs/symptoms of pulmonary edema.
- List signs/symptoms of COPD.
- Define hyperventilation.
- List signs/symptoms of hyperventilation.
- List steps of treatment of hyperventilation.
- Provide practice for objectives for lessons in CPR and mechanical aids to resuscitation.

Overview Of Lesson Contents

Ingested Poisons

Signs are variable depending on the substances. There may be burns, odors or stains about the mouth. Other common signs include:

Nausea/vomiting.	Excessive salivation or sweating.
Abdominal pain.	Abnormal respiration.
Diarrhea.	Unconsciousness.
Dilation or constriction of pupils.	Convulsions.

Emergency Care includes diluting the substance, inducing vomiting and contacting the Poison Control Center.

Dilution is accomplished with milk or water.

Vomiting should **Not** be induced when:

Strong acids or alkalis are swallowed

Petroleum products are swallowed

Patient is not fully conscious or is convulsing

Vomiting is typically induced with syrup of ipecac.

Activated charcoal may be a helpful absorbent after emesis.

Soothing agents help to decrease gastrointestinal irritation.

The poisonous substance should be located, if possible, and the Poison Control Center contacted to determine the most effective procedure.

Poisonous plants can cause severe reactions ranging from gastrointestinal disturbances to nervous system disorders and circulatory collapse. There are no antidotes for plant poisons. Severe cases need basic life support and speedy transport.

Inhaled Poisons

For inhaled poisons; such as carbon monoxide, the major concern is removing the patient from the source.

Oxygen and cardiopulmonary resuscitation should be administered as required.

The Poison Control Center should be contacted.

Bites And Stings

Bees, Wasps, Ants. The major danger arises when the person has a hypersensitive reaction.

These reactions were discussed previously under the heading "anaphylactic shock".

In addition to basic life support, the following should be done:

Place a constricting band above an injury in an extremity.

If present, carefully scrape stinger and venom sac away.

- Place an ice pack over the bitten area.
- May ASSIST patient with medication if allowed by State and local protocol.

Spiders

- Death has rarely been reported.
- Severe cases should receive basic life support, application of a cold pack to the bite and immediate transport.
- Antivenins are available for black widow and brown recluse spider bites, and identification of the insect is important.

Snakes

- Venomous species include the pit viper (rattlesnake, cottonmouth and copperhead) and coral snake. Coral snake is especially dangerous since it afects the central nervous system.
- Emergency care for pit vipers bites:
  - Calm patient.
  - Cleanse wound.
  - Wrap soft rubber tubing about the extremity above and below fang marks to occlud ONLY superficial venous flow.
  - Splint the extremity.
  - Check vital signs.
  - Prevent shock.
  - Apply ice pack to the wound only if directed to do so directly by a physician or Poison Control Center.
  - Incise wound and suction with a suction cup only IF wound occurred within previou 30 minutes, IF patient shows signs of envenomation, and IF directed to do so by a physician or Poison Control Center.
- Emergency care for coral snake is identical except that the constricting band is placed above the wound only and incisions and suction are not recommended.

Heart Attack

- The heart is a muscle and, like all muscles in the body, is supplied with arteries.
- Arteriosclerosis is a disease process that can damage coronary arteries. It lays down deposits of fat which progressively narrow the artery.
- When an artery becomes blocked, that part of the muscle which it serves dies and the patient has what is known as a myocardial infarction.
- The heart will still continue to pump even though part of the muscle dies. However, the attack usually occurs in the left ventricle which may be unable to pump all blood coming from the lungs. Fluid may accumulate in the lungs—a condition known as pulmonary edema.
- If too much muscle is lost, shock and sudden death will result.
- An acute myocardial infarction may have the following signs/symptoms:
  - Sudden onset of weakness, nausea and sweating without a clear cause.
  - Pain—usually described as squeezing. It is substernal and perceived as radiating t the jaw, left arm or both arms. It is unrelated to exertion and not relieved by rest.
  - Arrhythmia and fainting.
  - Pulmonary edema.
  - Sudden death.
  - Pulse usually increases.
  - Blood pressure falls.
  - Respirations are normal unless pulmonary edema develops; then respirations are rapid and shallow.

Patient appears frightened and may be sweaty and pale gray in color.

Emergency Care

Emergency care for patients suspected of having a heart attack:

- Place the patient in a semi-reclining position (position of comfort).
- Administer oxygen by face mask.
- Do not allow the patient to assist in moving himself.
- Comfort and reassure patient.
- Loosen patient's clothing.
- Prepare to administer CPR if cardiac arrest occurs. Provide prompt and efficient transport.

Angina Pectoris is pain which occurs when the heart needs more oxygen than is available. It is usually brought on by stress or unusual effort.

The patient suffers pain in the chest; it may radiate to the jaw or arms. It is felt as a pressure or squeezing sensation.

- Patients are usually aware of their condition and have been given medication (nitroglycerine) by their physician to relieve the pain; assist them in taking any prescribed medication.
- Administer oxygen and place in a position of comfort.

Congestive Heart Failure Occurs

When the heart does not pump blood efficiently to the body, fresh blood cannot enter the heart from the lungs. Blood and other fluids accumulate in the lungs.

Signs/Symptoms may include the following:

- Shortness of breath
- Anxiety
- Rapid heart rate
- Rales or wheezing sounds
- Normal or somewhat high blood pressure
- Distended neck veins

Emergency care for this patient is the same as that for heart attack patients

Stroke

A stroke is also known as a cerebrovascular accident or CVA; it is an interruption of blood flow long enough to cause damage to the brain.

Part of the brain has been damaged due to a blood clot, embolus or rupture of an artery. A clot may have formed elsewhere in the body and traveled to the brain as an embolus.

Signs of a **CVA** include:

- Numbness or paralysis of the extremities, often unilateral
- Confusion or dizziness
- Difficulty with speech or vision
- Diminished consciousness; coma
- Convulsions
- Headache alone
- Incontinence

Emergency Care. Care will depend on the signs exhibited by the particular patient. Major consideration is calm treatment and careful handling, particularly of paralyzed parts. The airway must be monitored continuously.

Note: Even though the patient may not be able to speak and appears unconscious, he may be able to hear and understand what is being said—be careful what you say in front of such patients.

Dyspnea is defined as a sensation of shortness of breath.

It may be caused by medical or traumatic incidents.

Medical problems include:
- Acute pulmonary edema
- Airway obstruction by aspiration of vomitus or foreign objects—discussed previously.
- Pulmonary diseases:
  - Chronic obstructive lung disease (emphysema or chronic bronchitis).
  - Asthma or allergic reactions.

Hyperventilation.

With **Chronic Obstructive Pulmonary Disease** patients the respiratory center may be so depressed that the patient does not have a stimulus to breathe.

Signs/symptoms of **COPD** include:
- Respiratory distress—wheezing on expiration; difficult expiration; increased respiratory rate.
- Tension and anxiety.
- Blood pressure possibly slightly elevated.
- Cyanosis.

Emergency Care includes:
- Reassure the patient.
- Administering oxygen by VENTURI MASK.
- Assisting patient in taking his own medication.

Hyperventilation is caused by: over-breathing usually due to psychological stress.

The **Signs** of hyperventilation are:
- Anxiety, terrified of death.
- Dizziness and fainting.
- Numbness or tingling of hands and feet.
- Stabbing chest pain.
- Rapid breathing.
- High pulse rate.

Emergency Care should include:
- Reassuring the patient and,
- Asking the patient to breathe into paper bag.

Study Suggestions

1. You have examined each patient (and questioned relatives and/or bystanders as appropriate) and suspect that each is suffering from one of the conditions listed below. Describe what made you suspect each condition and how you would care for the patient.
   a. Heart attack.
   b. Chronic obstructive lung disease.
   c. Anaphylactic shock.
   d. Bronchial asthma.
   e. Bite by a coral snake.
2. You have patients exhibiting the signs and/or symptoms listed below. What might be wrong with each patient (include all possible conditions)? What other signs or symptoms might you check for? How would you care for each patient?
   a. The patient is dizzy and has a headache. His speech is slurred and he appears confused.
   b. The patient is breathing rapidly and has a stabbing chest pain.

c. The patient has obvious respiratory distress and is wheezing on expiration.

d. The patient is in a closed car with the engine running. He is unconscious and his face is pink.

e. From the odor, the child appears to have swallowed gasoline from the lawn mower.

f. The patient is in obvious respiratory distress. He is elderly and has a barrel-like chest.

Lesson 19

MEDICAL EMERGENCIES

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Arrhythmia

Angina Pectoris

Arteriosclerosis

COPD (Chronic Obstructive Pulmonary Disease)

Disinfection

Droplet

Dyspnea

Embolism

Hyperventilation

Hypoglycemia

Ingested

Poison Control Center

Myocardial infarction

Peritonitis

Thrombosis

MI

Lesson 19

ASSESSING BREATH SOUNDS

Listening carefully to breath sounds can tell you how a patient's respiratory system is working. The sounds you hear can tell you whether secretions, fluid, or obstructions are blocking air sacs and passages, and what lung areas may not be working.

To accurately assess breath sounds, the stethoscope needs to be of good quality and proper length. The tubing on your stethoscope should be thick walled and short (12", 30 cm, or less), with an adequate lumen. The diaphragm and bell should be of heavy construction, with the diaphragm at least 1 1/2" (3.8 cm) in diameter. The earpieces should be of rubber or plastic, and moldable to your ear.

Natural breath sounds are high-pitched. Use only the diaphragm (the disk), which is designed to pick up high-pitched sounds. Become comfortable with the normal breath sounds and, therefore, abnormal will stand out easily when assessing the lungs.

Listen to all your patients' breath sounds. It is good practice and makes you more comfortable with the procedure.

Do not auscultate over bones or breast tissue. Instead, place the stethoscope diaphragm between the patient's ribs (intercostal spaces). Be sure you hold the diaphragm firmly against the chest wall.

Instruct your patient to breathe in slowly and deeply through his/her mouth, and listen to at least one full breath - inspiration and expiration - in each position you check. Compare left side to right side in a symmetrical manner downward.

Bronchial air sounds are heard over the trachea. They are high-pitched, loud, and hollow sounding. If this sound is heard elsewhere, it could mean a lung problem such as pneumonia, pleural effusion, tumor, or severe atelectasis.

Bronchovesicular breath sounds have a breezy quality, and they are softer and lower pitched than bronchial. You will hear them in only two places: anteriorly, near the main stem bronchi in the first and second intercostal spaces, and posteriorly, between the scapulae. To hear them elsewhere, again could indicate an abnormality.

Vesicular breath sounds are soft, swishy, and breezy and sound lower pitched than bronchovesicular breath sounds. Vesicular breath sounds are heard in most of the peripheral parts.

Abnormal lung sounds are classified as rales, rhonchi, wheezes, and pleural friction rubs. Often, labeling a sound by one of the classifications is difficult if you do not have regular exposure to this assessment skill. Therefore, identify what you hear in your own terms.

Rales are light crackles like someone crinkling a cellophane wrapper. You can easily simulate this sound by rubbing a lock of hair between your finger next to your ear. Rales are produced by air passing through moisture in the small airways and alveoli.

Rales heard in the left and right lung bases are often in correlation of early signs of heart failure.

When you hear rales, listen to whether they are continuous throughout inspiration and expiration. Have the patient take a deep breath and cough. This maneuver could mobilize the secretions; if not, and you listen again and hear inspiratory/expiratory rales, this indicates excess fluid in the alveoli.

Rhonchi are coarse rattles, usually louder and lower pitched than rales, like a deep snore or a hoarse moan.

Fluid or secretions in larger airways are usually the source of rhonchi. Coughing will often clear the rhonchi. To describe rhonchi, adjectives of sonorous, bubbling, moaning, musical, and rumbly are used.

Wheezes come from narrowed airways and cannot be cleared by coughing. The wheezes are heard on inspiration and expiration or both.

This sound is frequently the result of asthmatic crises, or can be heard with obstructions and pulmonary edema.

Pleural friction rub is the sound made by the rubbing together of inflamed parietal and vesicular pleural linings. This sound is heard best in the anteriolateral lung field, and with the patient in the upright position.

Pleural friction rub has a superficial squeaking or grating quality, much like two pieces of leather rubbing against each other. Friction rub will not disappear with coughing.

Watch the patient with a friction rub. Due to the pleural inflammation, a great deal of pain may be experienced causing the patient to splint his breathing.

Note also absent breath sounds; with the possibility of a pneumothorax or possible surgical removal of a lung or lobe, sounds may not be heard.

ABNORMALITIES

Condition	Breath Sounds	Adventitious Sounds
Consolidation (Lobar pneumonia) Less motion on affected side	Bronchial Increased intensity	Rales
Pneumothorax (Usually unilateral)	Decreased or absent	None
Emphysema Enlarged alveoli	Decreased vesicular	Wheezing rhonchi Prolonged expiration
Pleural effusion Pleural fluid Thickening	Decreased intensity May be decreased	None
Atelectasis Collapsed lung area	Decreased to absent	None
Congestive heart failure	Normal or prolonged expiration	Rales at lung bases Maybe wheezing
Acute bronchitis Bronchi constriction	Normal or prolonged expiration	Wheezing rhonchi

Lesson 20
Medical Emergencies II

Introduction

This lesson continues coverage of common medical conditions. It includes discussions of causes, signs and emergency care for diabetic conditions, the acute abdomen, communicable diseases, patients with abnormal behavior, alcohol and drug abuse and epilepsy. It also includes a review of common problems in caring for child patients and practice in assessing a patient's condition. The EMT should be able to recognize medical conditions and special problems in children in order to render appropriate emergency care.

Objectives

At the conclusion of Lesson #20, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- Define diabetes.
- Describe the purpose and functions of insulin.
- List signs/symptoms of diabetic coma.
- List signs/symptoms of insulin shock.
- List steps in treatment of conscious diabetic patient.
- List steps in treatment of unconscious diabetic patient.
- Describe causes of insulin shock.
- Describe causes of diabetic coma.
- Define acute abdominal distress.
- List signs/symptoms of acute abdominal distress.
- List steps in the treatment of a patient with acute abdominal distress.
- List 4 special steps that should be used when examining a patient with acute abdominal distress.
- List 3 ways a communicable disease can be transmitted.
- List steps EMTs can take to lessen personal exposure to a communicable disease.
- List steps EMTs must take in the maintenance of the emergency vehicle post-exposure to a communicable disease.
- List 6 signs/symptoms of a patient who has abused chemical substances.
- List the general treatment procedures to be taken when caring for substance abuse patients.
- Define seizure.
- Define convulsion.
- List steps in the emergency care of a patient during and post seizure/convulsion.
- Describe the treatment for status epilepticus.
- Demonstrate obstructed airway maneuvers in infants to AHA standards.
- Demonstrate infant rescue breathing according to AHA standards.
- Demonstrate infant CPR according to AHA standards.
- List signs/symptoms of croup and epiglottitus.
- List steps in treatment of croup/epiglottitus.
- State normal vital signs in children.
  - —Newborn
  - —1 year
  - —3 years
  - —6 years
- List steps in managing fevers in children.
- List steps in treating child victim of ingested poisoning.

Overview Of Lesson Contents

Diabetes

Diabetes is a condition in which the body is unable to use sugar normally. All body cells need sugar to survive. Insulin is necessary to permit sugar to pass from the bloodstream to body cells. If there is not enough insulin, sugar will be unable to get to body cells and they will starve. If there is too much insulin, there will be insufficient sugar in the bloodstream and brain cells will be damaged since they need a constant supply of sugar.

Diabetic Coma occurs when:

There is insufficient insulin and therefore too much sugar in the blood and not enough in the body cells. The patient:

Has eaten too much food that contains or produces sugar, or has not taken his insulin.

The diabetic coma patient may exhibit some or all of the following signs:

A sweet or fruity (acetone) odor.

Rapid, weak pulse.

Air hunger–rapid, deep breathing.

Varying degrees of unresponsiveness, up to coma.

Normal or slightly low blood pressure.

Note: The onset of diabetic coma is gradual.

This patient needs immediate transportation to a medical facility.

Insulin Shock (Overdose) occurs when:

There is too much insulin in the body; therefore, the sugar leaves the blood rapidly and there is insufficient sugar for the brain cells. The diabetic:

Has taken too much insulin, or

Has not eaten enough food, or

Has exercised excessively.

Signs include the following:

Full, rapid pulse.

Normal breathing.

Dizziness, headache.

Fainting; seizures; disorientation; coma.

Normal blood pressure

Note: The onset of insulin shock is sudden; it may occur within minutes.

The patient desperately needs sugar before brain damage and death occur. Sugar in any form can be given to a conscious patient. Both the conscious and unconscious patient need immediate transportation to a medical facility.

Note: If the EMT-A can't distinguish between diabetic coma and insulin shock and sugar is available, have the conscious patient take it. It can't appreciably hurt the patient in diabetic coma and may save the life of a patient in insulin shock. Transport unconscious patients without delay. **Do Not Administer Sugar Or Other Oral Glucose Agents To Unconscious Patients.**

Acute Abdominal Distress

The term means abdominal distress caused by irritation or inflammation of the peritoneum.

Signs may include:

Abdominal pain, local or diffuse.

Abdominal tenderness, local or diffuse.

Patient is quiet and reluctant to move.

Rapid shallow breathing.

Rapid pulse.
Low blood pressure.
Tense, often distended, stomach.
Position of the patient.

Special Examination Procedures, should be completed including:

Determining whether the patient is restless or quiet and whether movement causes pain.
Feeling the abdomen gently to see if it is tense or soft.
Determining whether the patient can relax the abdominal wall on command.
Determining whether the abdomen is tender when touched.

The patient in acute abdominal distress needs speedy but prudent transportation to a medical facility. Care includes:

Keep airway clear.
Administer oxygen if necessary.
No liquids or food.
No medication.
Position patient comfortably.
Prevent and manage shock as appropriate.

Common Communicable Diseases include:

Chicken pox
Diphtheria
German measles
Gonorrhea
Malaria
Measles
Meningitis
Mononucleosis
Mumps
Pneumonia
Poliomyelitis
Rocky Mountain spotted fever
Smallpox
Scarlet fever
Syphilis
Tuberculosis
Typhoid fever
Whooping cough

Communicable Diseases Are Transmitted By: Direct contact, indirect contact or inhalation.

If nature of call is known in advance:

Wear disposable gown and mask, remove all unnecessary equipment from the vehicle and use as much disposable equipment as possible.

Upon returning from the call perform the following as appropriate:

Boil clothing.
Wash hands.
Shower.

Follow the latest medical recommendations for vaccination, immunization and decontamination.

Substance Abuse

Alcohol is a depressant that affects a person's judgment, vision, reaction time and coordination. In very large quantities, it can cause death by paralyzing the respiratory center in the brain.

Signs of alcoholic intoxication.

Odor of alcohol on breath.
Swaying/unsteadiness.
Slurred speech.
Nausea/vomiting.
Flushed face.

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Remember that these signs can mean illnesses or injuries other than alcohol (e.g., epilepsy, diabetes, head injury). It is therefore especially important that the person with alcohol on his breath (which can smell like the acetone breath of a diabetic) not be immediately dismissed as a drunk. He should be carefully checked for other illnesses/injuries.

When alcohol is taken in combination with analgesics, tranquilizers, antihistamines, barbiturates, etc., the depressant effects will be added together and, in some instances, the resultant effect will be greater than the expected combined effects of the two drugs.

The intoxicated patient should be given the same attention given to patients with other illnesses/injuries.

The intoxicated patient needs constant watching to be sure that he doesn't aspirate vomitus and that he maintains respirations.

An alcoholic who suddenly stops drinking can suffer from severe withdrawal problems.

Sudden withdrawal will often result in DT's (delirium tremens).

Signs include:

Shaking hands.
Restlessness.
Confusion.
Hallucinations.
Sometimes disruptive behavior.

The patient must be protected from hurting himself.

Drugs:Types

Uppers—Stimulants of the central nervous system. They include amphetamines, cocaine, caffeine, anti-asthmatic drugs and vasoconstrictor drugs.

Downers—depressants of the central nervous system. They include barbiturates, tranquilizers, marijuana, inhaled solvents and opiates.

Hallucinogens—they include LSD, mescaline, psilocybin and peyote. Marijuana also has some hallucinogenic properties.

Withdrawal from barbiturates can cause anxiety, tremors, nausea, fever, delirium, convulsions and ultimate fatality.

Withdrawal from opiates may include, among others, intense agitation, abdominal discomfort, dilated pupils, increased breathing and body temperatures and a strong craving for a "fix".

Emergency care for substance abuse patients include:

Inducing vomiting if the overdose was taken orally in the preceding 30 minutes.

Protect hyperactive patients from hurting themselves and others. They should be reassured and treated calmly.

Level of consciousness should be monitored and recorded.

Respirations should be carefully monitored since overdoses of depressants can cause respiratory depression and death.

The EMT should instill confidence.

The EMT should be alert for possible allergic reactions and shock.

Evidence should be preserved in cooperation with law enforcement agencies.

Prompt transportation should be provided.

Epilepsy is a neurological disorder manifested by seizures.

Most seizures are controlled by medication.

Common Types.

Petit Mal Seizures are the most common form and result in only a momentary loss of awareness.

Grand Mal Seizure

The patient convulses due to a sudden abnormal stimulation of brain cells. The convulsions are tonic and clonic. The convulsions are usually followed by unconsciousness called a postictal state.

Status Epilepticus

Continuous seizure activity without regaining consciousness.

Transport immediately.

The major requirements of the rescuer is to protect the patient from hurting himself during a seizure.

The epileptic should not be physically restrained in any way unless he is endangering his own welfare.

Move objects, not the patient in an effort to protect him.

He may need to be transported to a medical facility when the seizure is over; allow him to help you make the decision.

Do Not force foreign objects into the patient's mouth during seizures.

Problems Of Child Patients

Techniques of care for children are essentially the same as those for adults with some variations being necessary due to size.

Approach

There are special problems in dealing with children since they are apt to be afraid or unable to communicate, for example:

Fear

Of the accident scene—confusion, noise, cries of the injured, view of injured particularly if the injured are his parents.

Inability To Communicate

Too young or too frightened to communicate verbally.

The EMT should be reassuring, calm and understanding with child patients. Use simple language and a soft voice. Be very gentle in feeling for injuries.

Problems Related To Pediatric Patients

Fever. A child with an unusually high fever should be cooled before and during transport.

Convulsions. Convulsions are common in young children and frequently associated with fever. The convulsing child needs to be protected from injuring himself.

Croup And Epiglottitus. Partial airway obstruction which develops over a long period of time. Do not use obstructed airway maneuvers, administer humidified oxygen and transport immediately.

Sudden Infant Death Syndrome. Death usually occurs during sleep in an apparently healthy baby. The EMT will encounter anguished parents and should endeavor to assist the baby by administering CPR.

Child Abuse. The EMT-A should be alert to indications of child abuse and report suspicions to medical and other appropriate personnel.

Sexual Abuse. Children of both sexes are subject to sexual molestation. The patier should not be examined unless there is obvious bleeding that requires control. The patient should not wash, urinate or defecate.

Poisoning. Common in children. Treatment procedures are the same as an adult, except ipecac dose is reduced to 1 tablespoon. Follow the recommendations of the Poison Control Center.

VITAL SIGNS RANGES

Blood pressure

Ages	**Mean Systolic**	**Mean Diastolic**
Neonate	80	46
6-12 Months	89	60
1 year	96	66
2 years	98	64
6 years	100	56
12 years	114	60

Pulse Rate:

Age	**Pulse Rates**
Neonates	110-150
12 Months	100-140
2 years	90-110
6 years	80-100
10 years	70-110

Respiratory Rate:

Age	**Respiratory Rate**
Neonate	30-50
2 years	20-30
10 years	14-22
Adolescent	12-20

Study Suggestions

1. You have examined each patient (and questioned relatives and/or bystanders as appropriate) and suspect that each is suffering from one of the conditions listed below. Describe what made you suspect each condition and how you would care for the patient.

   a. Diabetic coma.
   b. Alcohol withdrawal.
   c. Grand Mal seizure.
   d. Heroin overdose.
   e. Appendicitis.

2. You have patients exhibiting the signs and/or symptoms listed below. What might be wrong with each patient (include all possible conditions)? What other signs or symptoms might you check for? How would you care for each patient?

   a. The patient is dizzy and has a headache. His speech is slurred and he appears confused.
   b. The patient smells of beer and is very unsteady.
   c. The child has fallen from a tree. He has no obvious fractures. He is unconscious, and his systolic blood pressure is 55 mm Hg.
   d. The baby has been found in his crib by his parents. He has no respirations or pulse.
   e. When you enter the patient's bedroom, he announces that he has just taken all his sleeping pills. An empty bottle is on the bedside table.

3. The child is unconscious and has multiple severe bruises all over his body. His parents tell you he fell down the stairs.

4. You have been informed that the patient you will be transporting has chicken pox. Describe precautions you would take before, during and after the run to protect yourself and minimize spread of the disease.

5. You have just made an ambulance run in which you transported a patient with small pox. Describe precautions you would take to protect yourself and minimize spread of the disease.

Lesson 20

TERMINOLOGY LIST

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Diabetic coma

Insulin shock

Communicable disease

Seizure

Mandatory reporter

Convulsion

Hyperglycemia

HIV

OSHA

Hepatitis B

CDC Guidelines

SIDS (Sudden Infant Death Syndrome)

Child abuse

Lesson 20

ASSESSMENT OF THE DIABETIC PATIENT

	Diabetic Coma	Insulin Shock
Cause	Hyperglycemia	Hypoglycemia
Onset	Gradual	Sudden
Skin	Warm, dry - eyes appear sunken	Pale, moist
Behavior	Drowsy	Anxious (if conscious)
Breath	Fruity odor (acetone)	Normal
Respirations	Deep, labored	Normal to rapid and shallow
Pulse	Rapid, weak	Full, rapid
Appetite	Nauseated	Hunger
Thirst	Present	Normal
Blood Pressure	Normal to slightly low	Normal

Lesson 20

INFECTION CONTROL IN THE PREHOSPITAL SETTING

Although infection control should be of continuing interest to all ambulance personnel, recent news about AIDS (Acquired Immune Deficiency Syndrome) has raised important questions in the minds of many. This flyer will answer some of the questions about AIDS and caring for the AIDS patient in a prehospital setting. However, emergency workers should always provide emergency medical care under the assumption that any patient could have a communicable disease.

Some Facts About AIDS

AIDS may develop shortly after birth or at any later time. A person with AIDS has a weakness in his/her body's defense system which allows diseases, such as certain opportunistic infections and cancers, to develop. The symptoms of AIDS is usually due to the effects of these opportunistic diseases.

AIDS is transmitted by means of infected blood and semen. HTLV-III (Human To-cell Lymphotropic Virus, Type III) has been identified as the infectious agent. Although the virus has been isolated from saliva, tears and urine, these fluids have not been implicated in transmission of the virus. Direct injection of infected blood (as with drug users who share "works") or intimate sexual contact have been identified as the routes of HTLV-III transmission.

These individuals at risk for developing AIDS include gay or bisexual men, intravenous drug users and hemophiliacs, or those who require blood transfusion (prior to implementation of rigorous blood screening techniques), as well as the sex partners of people in these groups.

AIDS is the most severe form of HTLV-III infection; most people who contract the virus will have a much less severe outcome. These outcomes include: (1) asymptomatic infection, and (2) AIDS-related complex (ARC). Asymptomatic individuals may develop ARC or AIDS and patients with ARC may also develop AIDS. Which patients will progress, when, and why are unknown.

As long as the virus stays within the AIDS patient, there is no risk to others. The AIDS virus is not hearty, once the virus leaves the body and is allowed to dry out, it is soon destroyed.

Hundreds of health care personnel, following a "significant exposure," such as a needle stick while caring for AIDS patients, have become part of a formal follow-up study. Not only have none of these people developed AIDS, but only three have developed antibodies against the HTLV-III virus, showing that even in high risk situations the virus is not easily transmissible. Transmission of the virus can occur as a result of a needle stick injury however.

Ambulance Attendants and the AIDS Patient

AIDS cannot be transmitted during casual contact. Therefore, routine transportation of AIDS patients by ambulance, and normal touching of patients or touching objects they have touched, including taking vital signs, does not pose a threat to ambulance crews.

The possible sources of contact for the AIDS virus are free blood and body secretions containing blood and/or semen. Some examples are obvious cuts, gunshot wounds, knifings, draining wounds, vomitus, and bloody stools from GI bleeds. For advanced life support personnel, individuals who start IV's may frequently come in contact with patient blood.

The greatest threat to any health care worker, including ambulance crews, is needle stick injuries. This is the only transmission which has been documented to occur; and even at that, at a very low rate. All needle stick injuries should be reported to your supervisor. A theoretical risk to basic and advanced life support personnel is exposure of small wounds on the hands to contaminated blood fluids. Observation of health care workers to date tells us that this sort of exposure does not pose a major risk for contracting AIDS. No AIDS cases have been reported to result from this type of exposure.

The virus needs both a way to leave the host's body and a way to enter the body of another person. It cannot penetrate the skin.

Protection

The following guidelines will protect personnel from AIDS, but it is important to realize that these guidelines should be followed routinely, regardless of whether a patient is known to be infected with HTLV-III or any communicable disease. It is important to remember that hepatitis B and other more common communicable diseases pose a much greater risk to the EMS provider than does AIDS.

Bandage all cuts and abrasions on your own body (especially your hands) before caring for any patient.

Wear disposable gloves when caring for anyone with open draining wounds or when coming into contact with body secretions containing blood and/or semen.

If you cannot wear gloves for some reason, wash your hands as soon as possible. "Dry" soap products, foil wrapped hand washing preparations, or antiseptic solutions can be used if soap and running water are not available. Hand washing is the best overall protective measure for any ambulance attendant against almost every communicable disease.

After coming into contact with a patient, avoid touching your mouth, eyes or other mucous membranes until you have thoroughly washed your hands. Make it a practice to wash your hands after every call.

Consider using pocket masks, bag-valve-masks, or other resuscitative equipment when giving resuscitation to any patient. Pocket masks should have a one-way valve. Although mouth-to-mouth resuscitation is usually safe, it can be a concern if an open sore is present in either the patient's mouth or the mouth of the rescuer, or if the patient is suspected of having a communicable disease.

There are many reasons why patients cough; coughing does not automatically mean that the patient has AIDS. Furthermore, there is no evidence that HTLV-III can be transmitted by coughing. All crew members treating a coughing patient should consider wearing masks to protect against potentially infectious diseases, such as colds, flu, and tuberculosis. Alternately, unless it is contraindicated by other problems (e.g., vomiting, difficulty breathing), the patient should be asked to wear a mask. If a patient is not coughing, masks are not indicated.

Advanced life support personnel can avoid needle stick injuries by disposing of used needles in a permanently labeled, puncture resistant container which can then be disposed of at the hospital. Do not recap needles, bend them, break them, or clip them. Exercise care with other sharp instruments.

Disinfection Procedures (For items contaminated by blood, semen, urine, feces and saliva)

Any equipment or devices known or suspected to be contaminated with blood or other body fluids should be used once and disposed of, or be thoroughly cleaned and disinfected after use.

A mixture of nine parts water to one part chlorine bleach (9:1 solution, prepared immediately before use) or "straight" seventy percent (70%) isopropyl alcohol, can be used to disinfect equipment and instruments (e.g., scissors, tweezers) which are adversely affected by these products. Do not use a bleach solution on equipment which will come in contact with a patient's mucous membranes (it will burn). Do not use bleach on metal (it may discolor or "eat" the metal).

Surfaces (the floor of the rig, walls, stretcher frames, etc.) which have been exposed to blood and body fluids should be cleaned with a 9:1 water to bleach solution or with any hospital-grade disinfectant/detergent which is effective against the TB bacillus (tuberculocidal). Persons should wear disposable gloves and use "elbow grease" (hard frictional scrubbing) when cleaning surfaces. Soft cleaning of soiled, high contact, and/or contaminated areas is acceptable. All sections of the vehicle should be cleaned regularly as part of routine maintenance.

Non-washable equipment and instruments which come in contact with mucous membranes, and which are considered reusable, may be autoclaved; other methods may be used for disinfection, following local protocols. Contact your local hospital for the suggested routine.

Contaminated disposable items should be considered "infectious waste" and should be double bagged and disposed of according to local guidelines. The best approach might be to contact your local hospital and arrange to add your disposable waste to theirs. Disposable items consist of all dressings, paper products, and other single use items which have come in contact with potentially infected materials. No single use (disposable) equipment should ever be reused.

Because there could theoretically be a risk of transmission of AIDS through saliva, use of disposable airway equipment and disposable resuscitation bags may be considered. Reusable equipment can be disinfected by cleaning with hot, soapy water and air drying, or by cleaning with alcohol, bleach or disinfectant to prevent transmission of disease.

Change the linen on the stretcher after every call. Linens can be adequately cleaned on the washing machine's hot water cycle. Bleach can be added, if desired, but is not necessary for proper decontamination.

Reusable humidifier reservoirs (which are sometimes used with installed oxygen outlets to humidify oxygen for long transports) should be cleaned, rinsed out, and dried daily. The use of disposable humidifier reservoirs is preferable. Any tubing and masks used to deliver oxygen should be changed between patients and disposed of properly.

Unless the stethoscope and blood pressure cuff (sphygmomanometer) are contaminated with infected material, no special precautions are indicated. If necessary, wipe off the devices with a suitable disinfectant agent.

Ambulances do not have to be aired. Recommendations from the Center for Disease Control state, "... airing is not an effective terminal disinfectant procedure and is not necessary." Eliminating airing also shortens down time for vehicles used to transport persons with AIDS or with a suspected communicable disease.

Other Inforamtion

Patient confidentiality is maintained on all patients, including those with AIDS. The Office of Emergency Health Services feel that, as a professional courtesy, members of the emergency medical services community should inform one another when a patient has a communicable disease, including the level of precautions which should be taken. This can be done without compromising the patient or the health care workers. As a general rule, however, remember that routine infection control measures should be used when caring for any patient. Not only will this assure protection from AIDS, but also from other communicable diseases as well, such as hepatitis, tuberculosis, herpes, colds, and flu.

People with AIDS do live independently at home without contaminating their families, friends, or neighbors. Remember, a person with AIDS is a thinking, feeling human being who deserves the same consideration we would give to any other person.

Although the precautions suggested in this flyer may, at first glance, appear to be time consuming and/or expensive, the recommendations are practical and cost-effective. Remember that there is a greater possibility that your work will bring you in contact with a person infected by hepatitis B virus than one infected by HTLV-III. Remember also that hepatitis B is much more likely to be transmitted by that infected person. These precautions will reduce the risk for the ambulance attendants, as well as for the patients. Further, implementing these measures will reduce apprehension among staff caring for patients who are possibly infectious, and will prove the Emergency Medial Service provider's ability to deliver professional, high quality emergency medical care to all patients.

This inforamtion was prepared by the Iowa Department of Public Health AIDS Education program. For additional information call (515) 281-4938 or the Iowa AIDS hotline at 1-800-532-3301.

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Lesson 20

HEPATITIS B

Types and Causes

Hepatitis is an inflammation of the liver. There are several types of hepatitis. Hepatitis A, previously referred to as viral hepatitis is a disease spread via fecal/oral route. Hepatitis A causes few problems if proper hand washing techniques are used. Hepatitis non-A and non-B are generally related or acquired following a blood transfusion. Hepatitis B, caused by a virus is one of the major occupational hazards of health workers. Health workers who are high risk for hepatitis B are those exposed to body serums and blood; this group includes emergency medical service personnel.

Comparison of Type A and B Hepatitis

	Type A	Type B
Transmission	Fecal-Oral (usually food or water	Blood (evidence of oral and sexual spread via mucous membrane)
Precautions	Enteric precautions	Blood precautions
Persons at Risk	People who have never had the disease, low socioeconomic groups	Health personnel, homosexuals, heroin users
Prevention of Spread	Environmental and hygienic control; hand washing	High risk personnel, emphasis on careful technique when handling blood
Carriers	No	Yes, may not even know they are carriers
Symptoms	Wide variation from mild to severe nausea, anorexia, jaundice, joint pain, cold-like symptoms, rash, mild to severe flu-like symptoms. Hepatitis B can result in death.	
Prevention	Gamma Globulin for close contacts	Hyperimmune globulin after exposure (vaccine required by OSHA)

PREVENTING HEPATITIS B

Awareness--know who is at risk
Use precautions when dealing with blood and body fluids
Carefully handle needles and blunt instruments
Wash hands carefully and use other precautions
Get vaccine if susceptible

Lesson 20

FACT SHEET
OSHA BLOODBORNE PATHOGENS FINAL STANDARD

Summary of Key Provisions

Purpose: Limits occupational exposure to blood and other potentially infectious materials since any exposure could result in transmission of bloodborne pathogens which could lead to disease or death.

Scope: Covers all employees who could be "reasonably anticipated" as the result of performing their job duties to face contact with blood and other potentially infectious materials. OSHA has not attempted to list all occupations where exposures could occur. "Good Samaritan" acts such as assisting a co-worker with a nosebleed would not be considered occupational exposure.

Infectious materials include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. They also include any unfixed tissue or organ other than intact skin from a human (living or dead) and human immunodeficiency virus (HIV)--containing cell or tissue cultures, organ cultures and HIV or hepatitis B (HBV)--containing culture medium or other solutions as well as blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Exposure Control Plan: Required employers to identify, in writing, tasks an procedures as well as job classifications where occupational exposure to blood occurs--without regard to personal protective clothing and equipment. It must also set forth the schedule for implementing other provisions of the standard and specify the procedure for evaluating circumstances surrounding exposure incidents. The plan must be accessible to employees and available to OSHA. Employers must review and update it at least annually--more often if necessary to accommodate workplace changes.

Methods of Compliance: Mandates universal precautions (treating body fluids/ materials as if infectious) emphasizing engineering and work practice controls. The standard stresses hand washing and requires employers to provide facilities and ensure that employees use them following exposure to blood. It sets forth procedures to minimize needlesticks, minimize splashing and spraying of blood, ensure appropriate packaging of specimens and regulated wastes and decontaminate equipment or label it as contaminated before shipping to servicing facilities.

Employers must provide, at no cost, and require employees to use appropriate personal protective equipment such as gloves, gowns, masks, mouthpieces and resuscitation bags and must clean, repair and replace these when necessary. Gloves are not necessarily required for routine phlebotomies in volunteer blood donation centers but must be made available to employees who want them.

The standard requires a written schedule for cleaning, identifying the method of decontamination to be used, in addition to cleaning following contact with blood or other potentially infectious materials. It specifies methods for disposing of contaminated sharps and sets forth standards for containers for these items and other regulated waste. Further, the standard includes provisions for handling contaminated laundry to minimize exposures.

HIV and HBV Research Laboratory and Production Facilities: Calls for these facilities to follow standard microbiological practices and specifies additional practices intended to minimize exposures of employees working with concentrated viruses and reduce the risk of accidental exposure for other employees at the facility. These facilities must include required containment equipment and an autoclave for decontamination of regulated waste and must be constructed to limit risks and enable easy clean up. Additional training and experience requirements apply to workers in these facilities.

Hepatitis B Vaccination: Requires vaccinations to be made available to all employees who have occupational exposure to blood within 10 working days of assignment, at no cost, at a reasonable time and place, under the supervision of licensed physician/licensed health care professional and according to the latest recommendations of the U.S. Public Health Service (USPHS). Prescreening may not be required as a condition of receiving the vaccine. Employees must sign a declination form if they choose not to be vaccinated, but may later opt to receive the vaccine at no cost to the employee. Should booster doses later be recommended by the USPHS, employees must be offered them.

Post-Exposure Evaluation and Follow-up: Specifies procedures to be made available to all employees who have had an exposure incident plus any laboratory tests must be conducted by an accredited laboratory at no cost to the employee. Follow-up must include a confidential medical evaluation documenting the circumstances of exposure, identifying and testing the source individual if feasible, testing the exposed employee's blood if he/she consents, post-exposure prophylaxis, counseling and evaluation of reported illnesses. Health care professionals must be provided specified information to facilitate the evaluation and their written opinion on the need for hepatitis B vaccination following the exposure. Information such as employee's ability to receive the hepatitis B vaccine must be supplied to the employer. All diagnoses must remain confidential.

Hazard Communication: Requires warning labels including the orange or orange-red biohazard symbol affixed to containers of regulated waste, refrigerators and freezers and other containers which are used to store or transport blood or other potentially infectious materials. Red bags or containers may be used instead of labeling. When a facility uses universal precautions in its handling of all specimens, labeling is not required within the facility. Likewise, when all laundry is handled with universal precautions, the laundry need not be labeled. Blood which has been tested and found free of HIV or HBV and released for clinical use, and regulated waste which has been decontaminated, need not be labeled. Signs must be used to identify restricted areas in HIV and HBV research laboratories and production facilities.

Information and Training: Mandates training within 90 days of effective date, initially upon assignment and annually--employees who have received appropriate training within the past year need only receive additional training in items not previously covered. Training must include making accessible a copy of the regulatory text of the standard and explanation of its contents, general discussion on bloodborne diseases and their transmission, exposure control plan, engineering and work practice controls, personal protective equipment, hepatitis B vaccine, response to emergencies involving blood, how to handle exposure incidents, the post-exposure evaluation and follow-up program, signs/labels/color-coding. There must be opportunity for questions and answers, and the trainer must be knowledgeable in the subject matter. Laboratory and production facility workers must receive additional specialized initial training.

Recordkeeping: Calls for medical records to be kept for each employee with occupational exposure for the duration of employment plus 30 years, must be confidential and must include name and social security number; hepatitis B vaccination status (including dates); results of any examinations, medical testing and follow-up procedures; a copy of the health care professional's written opinion; and a copy of information provided to the health care professional. Training records must be maintained for three years and must include dates, contents of the training program or a summary, trainer's name and qualifications, names and job titles of all persons attending the sessions. Medical records must be made available to the subject employee, anyone with written consent of the employee, OSHA and NIOSH--they are not available to the employer. Disposal of records must be in accord with OSHA's standard covering access to records.

Dates: Sets effective date 90 days after publication in the Federal Register. Exposure control plan must be completed within 60 days of the effective date. Information and Training requirements take effect 90 days following the effective date. And the following other provisions take effect 120 days after the effective date: engineering and work practice controls, personal protective equipment, housekeeping, special provisions covering HIV and HBV research laboratories and production facilities, hepatitis B vaccination and post-exposure evaluation and follow-up and labels and signs.

CRIMINAL CODE REVISION - SEXUAL ABUSE SECTION
as passed by Iowa Legislature in 1976.

Effective January, 1978.

DIVISION IX

SEXUAL ABUSE

Section 901. NEW SECTION. SEXUAL ABUSE. Any sex act between persons is sexual abuse by either of the participants when the act is performed with the other participant in any of the following circumstances:

1. Such act is done by force or against the will of the other. In any case where the consent or acquiescence of the other is procured by threats of voilence toward any person, the act is done against the will of the other.

2. Such other participant is suffering from a mental defect or incapacity which precludes giving consent, or lacks the mental capacity to know the right and wrong of conduct in sexual matters.

3. Such other participant is a child.

Sec. 902. NEW SECTION. SEXUAL ABUSE IN THE FIRST DEGREE. A person commits sexual abuse in the first degree when in the course of committing sexual abuse the person causes another serious injury.

Sexual abuse in the first degree is a class A felony.

Sec. 903. NEW SECTION. SEXUAL ABUSE IN THE SECOND DEGREE. A person commits sexual abuse in the second degree when the person commits sexual abuse under any of the following circumstances:

1. During the commission of sexual abuse the person displays in a threatening manner a deadly weapon, or uses or threatens to use force creating a substantial risk of death or serious injury to any person.

2. The other participant is under the age of twelve.

3. The person is aided or abetted by one or more persons and the sex act is committed by force or against the will of the other participant.

Sexual abuse in the second degree is a class B felony.

Sec. 904. NEW SECTION. SEXUAL ABUSE IN THE THIRD DEGREE. Any sex act between persons who are not at the time cohabiting as husband and wife is sexual abuse in the third degree by either of the participants when the act is performed with the other participant in any of the following circumstances:

1. Such act is done by force or against the will of the other.
2. The other participant is suffering from a mental defect or incapacity which precludes giving consent, or lacks the mental capacity to know the right and wrong of conduct in sexual matters.
3. The other participant is a child.
4. The other person is fourteen years of age but less than sixteen years of age and the defendant is a member of the same household as the victim, the defendant is related to the victim by blood or affinity to the fourth degree, or the defendant is in a position of authority over the victim and used this authority to coerce the victim to submit.

Sexual abuse in the third degree is a class C felony.

Sexual abuse in the fourth degree is a class D felony.

Sec. 905. NEW SECTION. RESISTANCE TO SEXUAL ABUSE. Under the provisions of this division it shall not be necessary to establish physical resistance by a participant in order to establish that an act of sexual abuse was committed by force or against the will of the participant. However, the circumstances surrounding the commission of the act may be considered in determining whether or not the act was done by force or against the will of the other.

Sec. 906. NEW SECTION. JURY INSTRUCTIONS FOR OFFENSES OF SEXUAL ABUSE. No instruction shall be given in trial for sexual abuse cautioning the jury to use a different standard relating to a victim's testimony than that of any other witness to that offense or any other offense.

Sec. 907. NEW SECTION. DETENTION IN BROTHEL.

Any person who, by force, intimidation, or false pretense entices another who is not a prostitute to enter a brothel with the intent to cause such other to become an inmate thereof, or who detains another, whether a prostitute or not, in any brothel, against the will of such other, with the intent that such other engage in prostitution therein, commits a class C felony.

Sec. 908. NEW SECTION. LASCIVIOUS ACTS WITH A CHILD.

It is unlawful for any person eighteen years of age or older to perform any of the following acts with a child with or without his or her consent unless married to each other, for the purpose of arousing or satisfying the sexual desires of either of them:

1. Fondle or touch the pubes or genitals of a child.
2. Permit a child to fondle or touch his or her genitals or pubes.
3. Solicit a child to engage in a sex act.
4. Inflict pain or discomfort upon a child or permit a child to inflict pain or discomfort on him or her.

Any person who violates a provision of this section shall, upon conviction, be guilty of a class D felony.

Sec. 909. NEW SECTION. INDECENT EXPOSURE.

A person who exposes his or her genitals or pubes to another not his or her spouse, or who commis a sex act in the presence of or view of a third person, commits a serious misdemeanor, if:

1. The person does so to arouse or satisfy the sexual desires of either party; and
2. The person knows or reasonably should know that his act is offensive to the viewer.

Sec. 910. NEW SECTION. COST OF MEDICAL EXAMINATION IN CRIMES OF SEXUAL ASSAULT

The cost of a medical examination for the purpose of gathering evidence and the cost of treatment for the purpose of preventing veneral disease shall be borne by the state department of health.

DEFINITIONS OF TERMS IN SEXUAL ABUSE SECTION

1. Sec. 205. NEW SECTION. CHILD

   For purpose of this act, unless another age is specified, a child is any person under the age of 14 years.

2. Sec. 217. NEW SECTION. SEX ACT

   The term "sex act" or "sexual activity" means any sexual contact between two or more persons by penetration of the penis into the vagina or anus, by contact between the mouth and genitalia, or by contact between the genitalia of one person and the genitalia or anus of another person or by use of artificial sexual organs or substitutes therefore in contact with genitalia or anus.

3. Sec. 211. NEW SECTION. FORCIBLE FELONY

   A forcible felony is any felonious assault, murder, sexual abuse, kidnapping, robbery, arson in the first degree, or burglary in the first degree.

PENALTIES

Sec. 201. NEW SECTION. CLASS A FELONY

Upon a plea of guilty, a verdict of guilty, or a special verdict upon which a judgement of conviction of a class A felony may be rendered, the court shall enter a judgement of conviction and shall commit the defendant into the custody of the director of the division of adult corrections for the rest of his life. Nothing in this chapter pertaining to deferred judgement, suspended sentence or probation shall apply to a class A felony, and no person convicted of a class A felony shall be released on parole unless the governor commutes the sentence to a term of years.

Section 209

A class B felon shall be confined for no more than 25 years.

A habitual offender shall be confined for no more than 15 years.

A class C felon, not a habitual offender, shall be confined for no more than 10 years, and in addition may be sentenced to a fine of not more than five thousand dollars.

A class D felon, not a habitual offender, shall be confined for no more than five years, and in addition may be sentenced to a fine of not more than one thousand dollars.

For a serious misdemeanor, imprisonment not to exceed one year, or a fine not to exceed one thousand dollars, or both.

EMERGENCY UPDATE

Volume 4 Number 10 October 1986

Responding to an unexpected infant death

by Connie Guist, RN

It happens 6,000 to 7,000 times each year in the United States, about 150 times a year in Wisconsin. A parent or caregiver puts an apparently healthy infant down to sleep. Sometime later, the infant is found lifeless, with no clues as to why. The family responds with shock, denial, an overwhelming sense of guilt and grief. By providing knowledgeable and compassionate care, the prehospital care provider can make a difference in how the family will view this devastating experience.

The immediate need of the family is for action. They only know that something is terribly wrong. Their child is either dead or dying. To the first care providers on the scene, the situation may seem overwhelming. The family is clinging to the hope that something can be done for their infant, even if the infant is obviously dead. There is probably little or nothing a care provider can do for the infant. The provider will have to deal with a wide range of reactions, from numb shock to violent hysteria.

When you arrive at the scene, make no assumptions as to what is wrong with the infant or why the infant may have died. The only thing that is known for sure is that the infant is dead or has experienced an unexplained life-threatening event. To assume the infant died of SIDS (sudden infant death syndrome or crib death) is premature. An autopsy can determine the actual cause of death by identifying an infection, a birth defect an injury, neglect or abuse or SIDS.

By following some basic guidelines, the prehospital care provider can assure that everything possible has been done for the infant and family. These guidelines include following the rules and regulations of your department or agency, assessing the situation and identifying what is needed and looking for clues from the family. Questions should be asked in a non-threatening, non-accusatory manner.

(continued on page 3)

EMERGENCY UPDATE

Unexpected infant death

Every responding agency or department has specific rules and regulations about responding to a pulseless, non-breathing victim. These same rules apply in this situation. A key element to consider is when and by whom life support measures were initiated. If CPR has been started, these measures are continued. Even if the infant is obviously dead, continue CPR until medical personnel have declared death.

Another key element to determine is when, and by whom transport will occur, and whether the coroner or medical examiner have been called. It is best to be familiar with the protocol for these issues prior to an emergency. Remember, there is no routine way to respond to this situation but there are routine guidelines to follow. Each is unique and requires professional, individual assessment as to what is needed.

Often there is little that can be done for the infant. Family members then require your attention. Reactions to an infant's death will be as individual as they are. Do not misinterpret or read into these reactions. The care providers will have to be prepared to deal with the wide range of responses. Several suggestions to help you deal with family members are:

--Act in a calm, efficient manner, exhibiting kind concern.

--While in the home, make family feel as if everything that can be done is bein done.

--Explain what you are doing, where you are taking the infant and what will happen next.

--Avoid casual comments that may be over heard and misinterpreted by the family

In the emergency room:

--Keep family informed of the infant's status.

--Small, nonverbal gestures that reflect caring are helpful and well received, such as calling someone for them, sit with them, offer a sympathetic ear.

--Allow and encourage the family to see and hold the infant again after death.

(continued on page 4)

SUDDEN INFANT DEATH SYNDROME

WHO	· apparently normal, healthy infants · all races, religions, nationalities, economic levels
WHAT	· # 1 cause of death between 1 week & 12 months of age · a definitive medical entity determined by autopsy · at least as old as the Old Testament (I Kings 3:19-21)
WHEN	· occurs usually during a sleeping period · peak incidence between 2 & 5 months of age
WHERE	· anywhere · under anyone's care
WHY	· remains a mystery · may have more than one cause
HOW OFTEN	· 2 per 1,000 live births · 6,000 - 7,000 annually in U.S.

Because of the nature of SIDS, no single test has been discovered to identify which infants will succumb; therefore, there is no general means of prediction or prevention.

Some basic facts about SIDS

SIDS is a definite medical entity and is the major cause of death in infants after the first month of life.

- SIDS victims appear to be healthy prior to death.
- At this time SIDS cannot be predicted or prevented, even by a physician.
- There appears to be no suffering; death occurs very rapidly, usually during periods of sleep.

What SIDS is not

- SIDS is not caused by external suffocation.
- SIDS is not caused by vomiting and choking.
- SIDS is not contagious.
- SIDS does not cause pain or suffering to the infant.
- SIDS cannot be predicted.
- SIDS cannot be prevented.

Unexpected infant death

They need an opportunity to grasp the reality of the situation and to say goodbye.

--Give parents permission to do what they need to do. Remember, although you may have previous experience with this type of situation, chances are that this is new to the family. They do not know what they are allowed to do at this time.

--Validate their feelings. Tell them it's okay to be mad, sad, afraid, even to feel guilty. They need to know what they are feeling is normal.

Asking questions about the infant and what happened is never easy. It is more difficult when asked of young parents, a babysitter, day care provider or other relative. The way questions are asked may increase the feelings of guilt. Remember, an investigation is to determine what happened to the infant, not what the parents did or didn't do. An easy way to avoid this is to not use "Did you..." when asking questions. Examples:

Ask - What time was the baby (Use name when possible) put to bed?
Not - When did you put the baby to bed?

Ask - When did the physician last see the baby?
Not - When did you take the baby to the doctor last?

Ask - What time was the baby last fed/seen alive?
Not - What time did you feed the baby/check the baby?

Much of the information needed can be obtained by just allowing the parents to talk and actively listening to them. By avoiding accusatory questions, the parents will feel supported. They will not have their feelings of guilt reinforced.

Responding to an infant's death is difficult for all involved, including the prehospital care provider. You will survive this tragedy by being knowledgeable, recognizing the responses of the family, identifying and acknowledging your own feelings and response to the situation and acting in a compassionate, professional, caring way.

The time that a prehospital care provider will spend with the family may be brief, but it can greatly influence how the family will deal with the infant's death long after the initial crisis is over.

* * * * *

Connie Guist, RN, is the past field coordinator for the Wisconsin Sudden Infant Death Syndrome Center, Milwaukee, WI.

Lesson 20

RECOGNIZING CHILD ABUSE

Abuse is one of the leading causes of children's death in the United States.

Definition: Deliberate and willful injury of a child by a caretaker. Involving hostile aggressive physical treatment such as hitting, burning, tying, etc. Child neglect can be considered a passive form of abuse.

Categories:

1. Physical: children have cuts, bruises, burns.
2. Sexual: Incest, exploitation (prostitution, etc.).
3. Neglect: Failure to feed, shelter, cloth.
4. Failure to thrive: Caloric and maternal deprivation.
5. Emotional: verbal abuse, belittling.

Characteristics:

1. Interaction between parent and child. Child often assumes the role of the parent.
2. Consistent history of accidents with injury. Unusual stories regarding how accidents happened.
3. Is there evidence of other injuries--old bruises, broken bones, cuts, etc.
4. How many trips has child had to hospital emergency room - in same city, other hospitals.
5. Does the child have other disabilities - was the child born premature?
6. Abused children often fear being touched and prefer to be left alone.

Intervention: It is important that emergency care personnel recognize abused children because eventually they have contact with the Emergency Care System. Most states require abuse be reported by health care providers. Early detection can lead to treatment and prevention of further/future abuses.

Summarized from article: McCracken, Janice in Emergency Care.

DEVELOPMENTAL DISABILITIES

I Developmental Disability
- A. Severe, chronic disability
  - 1. Attributed to a mental or physical impairment of combination
  - 2. Is manifested before the person is 22
  - 3. Is likely to continue indefinitely
  - 4. Results in substantial functional limitations in three or more of the following areas of life activity
    - a. Self care
    - b. Receptive and expressive language
    - c. Learning
    - d. Mobility
    - e. Self-direction
    - f. Capacity for independent living
    - g. Economic self-sufficiency
  - 5. Reflects the person's need for a combination and sequence of special, interdisciplinary or generic care, treatment or other services which are lifelong or extended

II Incidence
- A. There are nearly 4 million persons in U.S. with such disabilities
- B. Largest number are persons with mental retardation
  - 1. Classification
    - a. Low Normal
    - b. Mild
    - c. Moderate
    - d. Severe
    - e. Profound
  - 2. Behaviors
    - a. Difficulty comprehending
    - b. Difficulty communicating
    - c. Often have accompanying physical problems

III. Disruptive Behaviors in Persons with Developmental Disabilities
- A. Small number of persons with DD have disruptive behaviors
- B. Types of Disruptive Behaviors
  - 1. Self injurious behavior
  - 2. Aggressive behavior towards others
- C. Dealing with the persons with D.D.
  - 1. Remain calm - speak slowly and clearly
  - 2. Approach and respond normally
  - 3. Do not threaten or bargain with
  - 4. Be consistent

Lesson 21
Emergency Childbirth

Introduction

A childbirth can be an emergency event and knowledge of appropriate procedures will permit better care of both patient and baby. The lesson covers normal and abnormal births and provides for students to practice skills in assisting in deliveries and caring for the mother and the newborn.

Objectives

At the conclusion of Lesson #21, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- —Identify on a diagram the following:
  - —Uterus
  - —Cervix
  - —Vagina
  - —Fetus
  - —Placenta
  - —Umbilical Cord
  - —Amniotic sac
  - —Perineum
- —Define:
  - —Miscarriage/abortion
  - —Bloody show
  - —Crowning
  - —3 stages of labor
  - —Presenting part
- —List and state purpose of emergency OB kit.
- —List pre-delivery emergencies and state their emergency care.
- —List 3 indications of an imminent delivery.
- —List steps involved in pre-delivery preparation of mother.
- —List steps to assist in the delivery.
- —Describe (demonstrate) care of baby as soon as head appears.
- —Demonstrate infant resuscitation procedures (including use of oxygen).
- —Describe how/when to cut cord.
- —List steps to assist in delivery of placenta.
- —List steps in the care of mother post delivery.
- —List special considerations for multiple births.
- —Define premature baby and describe special considerations for care of.
- —Describe/demonstrate procedures for:
  - —Breech birth
  - —Prolapsed cord
  - —Arm/leg presentation
- —List steps in care of mother with excessive bleeding.

Overview Of Lesson Contents

Relevant Anatomy, Physiology And Terms

- Fetus
- Uterus
- Birth Canal
- Placenta (Afterbirth)
- Umbilical Cord
- Amniotic Sac (bag of water)
- Cervix
- Vagina
- Perineum
- Crowning
- "Bloody Show"
- Labor
  - First Stage
  - Second Stage
  - Third Stage
- Presenting Part
- Abortion
- Live Birth Certificate
- Fetal Death Certificate

Pre-Delivery Emergencies

For Convulsions: Resulting from epilepsy or toxemia, the EMT should:

Place mother on side.

Upon regaining consciousness, elevate shoulders and head.

Give oxygen.

For Heart/Lung Complications the patient should be given oxygen.

If the patient is **Hemorrhaging,** procedures are:

Do Not examine vaginally.

Administer oxygen.

Maintain body temperature.

Encourage mother to lie on her side.

Pneumatic counter pressure device may be used (legs only) if indicated.

INITIAL CONSIDERATIONS

It is generally best to transport the mother unless the delivery is expected in a few minutes.

To determine when the delivery is expected ask:

Has the mother had a baby before?

Does she feel she has to strain or move her bowels?

Is the vagina bulging or is baby crowning?

Precautions include:

Look, do not touch.

Do not let mother go to bathroom.

Do not hold mother's legs together.

NORMAL DELIVERY. Procedures are:

Have mother lie with knees drawn up and spread apart. If in automobile, have mother place one foot on the floorboard.

Place sheet, blanket, or newspaper under buttocks to lift them about 2 inches off the surface.

Fold sterile towel and place under buttocks.

Place another sterile towel on patient's abdomen and one on surface below opening of vagina.

When the baby's head appears, place the fingers of the gloved hand on its head and exert VERY GENTLE pressure.

If the amniotic sac does not break, use clamp to puncture sac and push sac away from baby's mouth and nose.

When the head is born, check if umbilical cord is around neck; slip over shoulder or clamp, cut and unwrap.

Place hand under baby's head for support and suction baby's mouth two or three times and each nostril once.

As the abdomen and hips are born, place the other hand under those parts—there are now two hands supporting the baby.

When feet are born, grasp feet.

Wipe blood and mucus from mouth and nose with a sterile gauze, suction mouth and nose again.

Wrap baby in a blanket and place on its side, head slightly lower than trunk.

Clamp, tie and cut umbilical cord.

Massage uterus.

Observe mother for delivery of placenta—few to 30 minutes; if over 20 minutes, transport. If heavy bleeding, transport. Massage uterus, administer oxygen, place sterile pad over vagina.

When delivered, wrap placenta in towel and put in plastic bag; 1/2 pint blood normal. Place sterile pad over vaginal opening, lower mother's legs, help her hold them together.

Record time of delivery and transport mother, baby and placenta to hospital.

Note: If baby does not deliver after 20 minutes of contractions every 2 to 3 minutes, transport immediately.

RESUSCITATION OF THE NEWBORN. Procedures are:

Suction airway as previously described.

Lay baby on side, head lower than body.

Snap index finger against bottom of feet; if no response:

Apply GENTLE mouth-to-mouth/nose resuscitation.

Continue resuscitation until breathing starts; then oxygen.

Initiate cardiopulmonary resuscitation if no pulse after 2 minutes.

Continue cardiopulmonary resuscitation until baby breathes or is pronounced dead by a physician.

BREECH DELIVERY. Procedures are:

Make same preparations as for normal delivery.

Allow buttocks and trunk to deliver spontaneously.

Support legs and trunk.

Allow head to deliver spontaneously.

If head does not deliver in 3 minutes, transport immediately. Do not pull baby out. Provide airway.

After head delivers, continue as in normal birth.

If only foot or arm protrudes, transport to hospital immediately.

Prolapsed Cord. Procedures are:

Put mother in shock position—legs elevated, give oxygen, keep hips elevated.

Wrap a sterile towel around the visible portion of the cord. Do not replace or put pressure on cord. The baby may have to be supported to relieve pressure on the cord.

Transport immediately.

Excessive Bleeding. (more than 5 soaked pads). Procedures are:

Prevent shock.

Pneumatic counter pressure device may be useful.

Place sterile sanitary napkin at opening of vagina; save blood-filled pads.

Do not hold legs together or put hand or anything in vagina.

Preserve any tissue passed.

Transport immediately.

Abortion (Miscarriage). Procedures are:

Prevent shock.

Pneumatic counter pressure device may be useful.

Immediately transport.

Save any passed tissue.

Multiple Birth—procedures are the same as for single births.

Premature Infant

Characteristics—usually thinner, smaller and redder than a full-term baby with a relatively large head.

Care

- Keep the baby warm.
- Keep the mouth and throat clear of fluid and mucus.
- Ensure cord does not bleed.
- Administer oxygen.
- Don't infect infant.
- Alert hospital.

Premature Infant Carrier. Procedures are:

- Fill hot water bottles, cover and place in carrier.
- Wrap infant in blanket or napkin.
- Make sure carrier is secure in ambulance.

Study Suggestions

1. You are transporting an expectant mother to the hospital when she starts to convulse. Describe how you would care for her.
2. You have arrived at the scene and find the expectant mother straining as if she has to move her bowels. What would you do?
3. If an obstetrical manikin is available, practice procedures involved in normal and breech deliveries. Have a classmate maneuver the infant manikin.
4. Identify all equipment and materials required for delivery of a baby and describe their use.
5. Describe what is meant by a prolapsed cord and the care you would provide in the event of such an emergency.
6. You have assisted in the delivery of a baby. You have suctioned the infant's airway but no respiration is apparent. Explain what you would do.
7. You have assisted in the delivery of a premature infant. Describe how you would care for the infant before and during transport.
8. The baby's head has delivered but the amniotic sac is intact. What would you do and why?

Lesson 21

EMERGENCY CHILDBIRTH

At the completion of this lesson, you should be able to define and use the following terminology correctly.

Abortion

Amniotic sac

Bloody show

Breech

Caphalic

Contraction

Crowning

Delivery

Eclampsia

False labor

Fetal heart tones

Fetus

Labor

LMP

Meconium

Molding

Mucous plug

Ova

Perineum

Placenta

Placenta abruptio

Placenta previa

Premature

Presentation

Term

Transition

Umbilical cord

Vernix

Lesson 21

CHEAT SHEETS FOR THE COACH

Early Labor

1. Be calm and have confidence in yourself. **RELAXATION TENDS TO SPREAD**: your presence and companionship are your most important contributions.
2. If contractions begin at night, urge her to get more sleep, you too. If they start during the day, help her to pass the time by walking.
3. Most women prefer to sit in a comfortable chair during contractions of early labor, moving about for brief periods in between. It is not necessary to go to bed.
4. The mother should not start her controlled breathing until she feels a definite need to. (You might practice with a few contractions to feel "ready".) Conscious relaxation with normal relaxed breathing is usually enough for the pre-active phases; if she needs to use breathing patterns right away, she must be in more advanced labor than the time alone would indicate.
5. The first breathing pattern to use with Conscious Relaxation is slow chest breathing. Check for relaxed shoulders, slow even rate. Keep breathing as quiet as possible.
6. Encourage fluids, remind to urinate hourly. No solid foods allowed; this includes milk.
7. Be generous with words or praise and encouragement, any comfort measures.
8. When the mother must concentrate fully on coping with contractions, it is time to go to the hospital. If the bag of water ruptures, GO TO THE HOSPITAL RIGHT AWAY!! Do not wait for contractions to start. Drive carefully. If the trip is longer than 15 minutes, plan for her to lie on her side on the back seat, if your car allows. A pillow behind her back sitting in the front seat can be a comfort as it allows the uterus more room to contract.
9. Knowing where to park, which entrance or elevator to use is all information gained from taking the hospital tour. Your preadmission form should be sent in ahead of time or at least filled out and brought with you to facilitate the registration process.
10. The hospital staff will be interested to know that you have attended classes and prepared for labor together. Tell them if you plan to stay together for labor and birth. Tell each new nurse who attends you since she might not have been told.
11. You should remain with the mother once you are in the hospital, especially if labor is advancing rapidly. You may be asked to wait until the "prep" is done, but do not go very far. It only takes 15-20 minutes at the most.

Active Labor

1. Contractions are definitely closer, stronger and more clear in pattern. The mother no longer wants to chat but becomes quiet and preoccupied with the work she is doing. Do not distract her with conversation, yours or anyones coming into the room. Contracts last only one minute; ask them nicely to please wait.

2. Keep the room the way she wants it--temperature, lights, door open or closed.
3. Assist in changing comfort positions every 1/2 to 1 hour. Remind her to exercise legs and feet between contractions when she is no longer walking around.
4. Help her up to the bathroom or onto a bedpan at least once every hour in active labor. Start as soon as the contraction is over to give her as much time as possible.
5. Use comfort measures such as back rubbing, effeurage, warm soaks, moist wash cloths, ice chips, holding her hand, as needed. Use the tools which work best for you.
6. Offer frequent words of encouragement, e.g., "You're doing great!"
7. Pace the contractions, count off the seconds in 15's. Tell her if/when the contractions are receding.
8. Watch for tension. Coach for relaxation even if you do not see any signs of tension. Keep breathing pattern EVEN and as SLOW as possible.

APGAR Scoring Chart

	Sign	0	1	2	Rating	
					1 Min.	5 Min.
A	1. Appearance (Color)	Blue, pale	Body pink, hands and feet blue	Completely pink		
P	2. Pulse (Heart rate)	Absent	Slow (below 100)	Over 100		
G	3. Grimace (Irritability)	No response	Some motion, cry	Vigorous cry		
A	4. Activity (muscle tone)	Flaccid, limp	Some flexing of extremities	Active motion		
R	5. Respiratory Effort	Absent	Slow, irregular	Good, crying		

Lesson 22
Burns and Hazardous Materials

Introduction

Proper management of patients suffering from buns or exposure to hazardous materials can save lives and limbs as well as minimize suffering. It is of critical importance that the EMT-A recognize hazardous material situations to protect himself and others.

Objectives

At the conclusion of Lesson #22, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List 2 functions of skin.
- Define and state 2 characteristics each of 1st degree, 2nd degree, and 3rd degree burns.
- Demonstrate knowledge of rules of 9's by dividing picture of human body into appropriate areas
- List 3 examples of a critical/severe burn.
- List 3 examples of a moderate burn.
- List 2 examples of a minor burn.
- List 3 steps in management of chemical burns.
- List precautions to take at scene of electrical burn.
- List steps in treatment of electrical burn.
- State the local agency responsible for handling nuclear wastes/to be contacted in case of accidents involving nuclear radiation.
- State how exposure to radiation affects severity of burns.
- List 7 steps to manage emergency scene involving hazardous material.

Overview Of Lesson Contents

Burns

Burns are classified by degree of damage to the skin.

First-Degree Burns. In a first-degree burn, only the top layer of skin is burned and the skin becomes reddened.

Second-Degree Burns. In a second-degree burn there is some damage to the dermis and characteristically the skin blisters.

Third-Degree Burns. In a third-degree burn the entire thickness of the skin is burned down to the subcutaneous fat. The skin usually is dry, pale or white but may be brown or even charred. There is a loss of sensation in the area due to a destruction of nerve endings.

The rule of nines provides a means of estimating the percentage of the body that is burned as follows:

	Adult		Infant	
a. Head	9%		18.0%	
b. Arms	9% ea.	(18%)	9.0% ea.	(18%)
c. Torso front	18%		18.0%	
d. Torso back	18%		18.0%	
e. Genitalia	1%		1.0%	
f. Legs	18% ea.	(36%)	13.5% ea.	(27%)
	100%		100.0%	

The **degree** of seriousness of a burn can be estimated from the following:

- Degree of the burn.
- Percentage of body burned.
- Location of the burn.
- Accompanying complications.
- Age of patient.
- **Note:** The general condition of the patient must also be considered. For example a moderate burn in an aged or critically ill person might be critical.

The following burns are considered critical:

- Burns complicated by respiratory tract injuries and other major injuries or fractures.
- Third-degree burns involving the critical **areas** of the face, hands, feet and genitalia.
- Third-degree burns covering more than 10% of the body surface.
- Second-degree burns covering more than 30% of the body surface.

Moderate Burns are considered to be those:

- Third-degree burns of 2 to 10% of the body surface excluding face, hands, feet and genitalia.
- Second-degree burns of 15 to 30% of the body surface.
- First-degree burns of 50 to 75% of the body surface.
- The general condition of the patient must also be considered. For example, a moderate burn in an aged or critically ill person might be serious.

Management of burns should include:

- Stopping the burning process, removing smoldering clothing.
- Covering with a clean dressing and maintaining body heat.
- Administering oxygen.
- NEVER use grease (e.g., butter, lard, vaseline) on a burn.

For **Chemical Burns** the patients needs speedy access to water.

- Chemicals in contact with the skin should be washed off with copious amounts of water as clothing is being removed, with the exception of lime (which may be brushed off the skin).
- For chemicals in the eye, the EMT may need to hold the patient's eye open for him and rinsing should continue for up to 20 minutes.
- **Electrical Burns** can be more serious than they appear since they can penetrate the skin deeply; the burn commonly enters in one place and leaves the body in another so that there are two wounds.
- The major problem with electrical burns is respiratory and cardiac arrest.
- If there are fallen wires or other electrical hazards, the power company or appropriate rescue group should be summoned immediately.
- Unless the power company says the power is off, it should be assumed that it is on even though street lights are off.
- Patients should be told to STAY IN THE VEHICLE.
- If there is a fire, they must jump from the vehicle (a child should be thrown from the vehicle). They must not make contact with the vehicle and the ground simultaneously.

Radiation

- Radiation burns may be nuclear or solar. Since solar burns are basically sunburns, they should be treated as any other first or second degree burn. The remainder of the session will therefore be devoted to nuclear burns.
- Radiation is a form of energy transmission.

- Ionizing radiation (alpha, beta and gamma rays) affects the body cells.
  - Alpha and beta particles are dangerous only if swallowed or inhaled—they damage internal organs.
  - Gamma rays are very penetrating and dangerous.
- The amount of radiation damage depends on:
  - Strength of the source.
  - Type of radiation exposure.
  - Duration of exposure.
  - Area of body affected.
  - Distance between person and source.
  - Shielding between person and source.
  - If a hazardous radiation level exists, the patient should be removed from the area as quickly as possible even if some of the rules of initial emergency care are violated.
  - If there is reason to suspect that there are radioactive materials on the patient's or rescuer's clothes, they should be removed at the edge of the exposed area and disposed of in labeled metal containers with tight lids.
  - Both EMT-A and patient should shower.
  - Standard decontamination procedures should be followed for EMT, patient and ambulance. The hospital should be notified.

Hazardous Materials are becoming a common problem.

- The extent of the problem is unknown; however contact with hazardous materials is far more likely than radiation exposure.

Safety is the primary concern in managing a hazardous material situation. Safety precautions must be initiated to protect the EMT, the public and the patient.

- EMT-A
- Public
- Patient

Resources are available and should be used in hazardous material situations including:

- *CHEMTREC* 1-800-424-9300
- *Hazardous Materials: Emergency Response Guidebook*
- (DOT P5800.2) (1980)
- State and local agencies.

Recognition and identification of hazardous material situations is critical, information may be obtained from:

- Placards, 4 digit number
- Shipping paper, 4 digit number or name.

General procedures for controlling a hazardous materials situation include:

- Keep unnecessary people away
- Stay upwind, safe distance
- Isolate the area.
  - Keep people out
  - Do not enter until fully protected with suit and self contained breathing apparatus.
- Avoid contact with the material
- Remove patient to safe zone.
- Institute CPR and give oxygen as indicated. Treat major injuries.
- If material contact has occurred, flush with water for at least 15 minutes.
- Remove and isolate contaminated material.
- Decontaminate self, equipment and ambulance as directed.

Study Suggestions

1. You have examined each patient (and questioned relatives and/or bystanders as appropriate) and suspect that each is suffering from one of the conditions listed below. Describe what made you suspect each condition and how you would care for the patient.

    Radiation exposure.

    Hazardous material exposure.

2. The patient has second-degree burns covering both legs. There is an open fracture of the tibia on the right leg. How would you care for him?
3. What would you do if your vehicle was exposed to gamma rays?
4. Identify State or local agencies who can assist in a hazardous material response.

Lesson 22

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Acid

Alkali

Arrhythmia

Atom

Blister

Disfunction

Drowning

Environmental

Exposure

Hypothermia

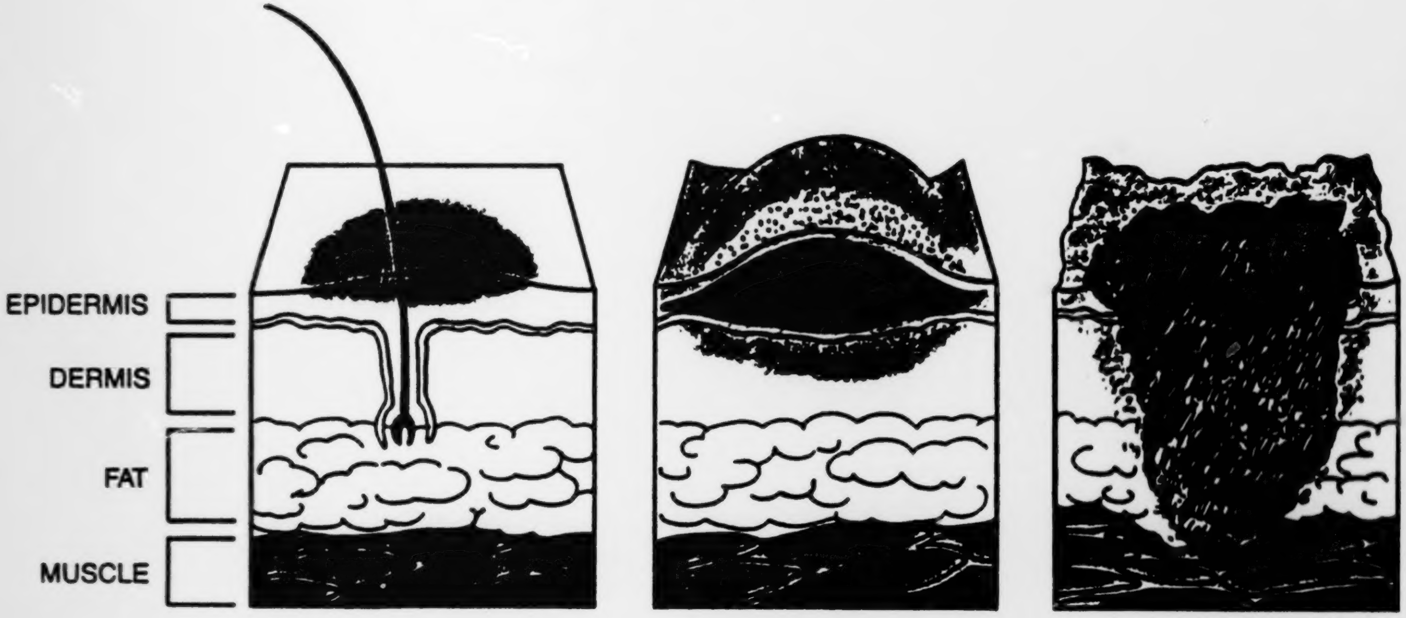
Radiation

Shield

Shivering

Thermal

BURNS


EPIDERMIS
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1ST DEGREE

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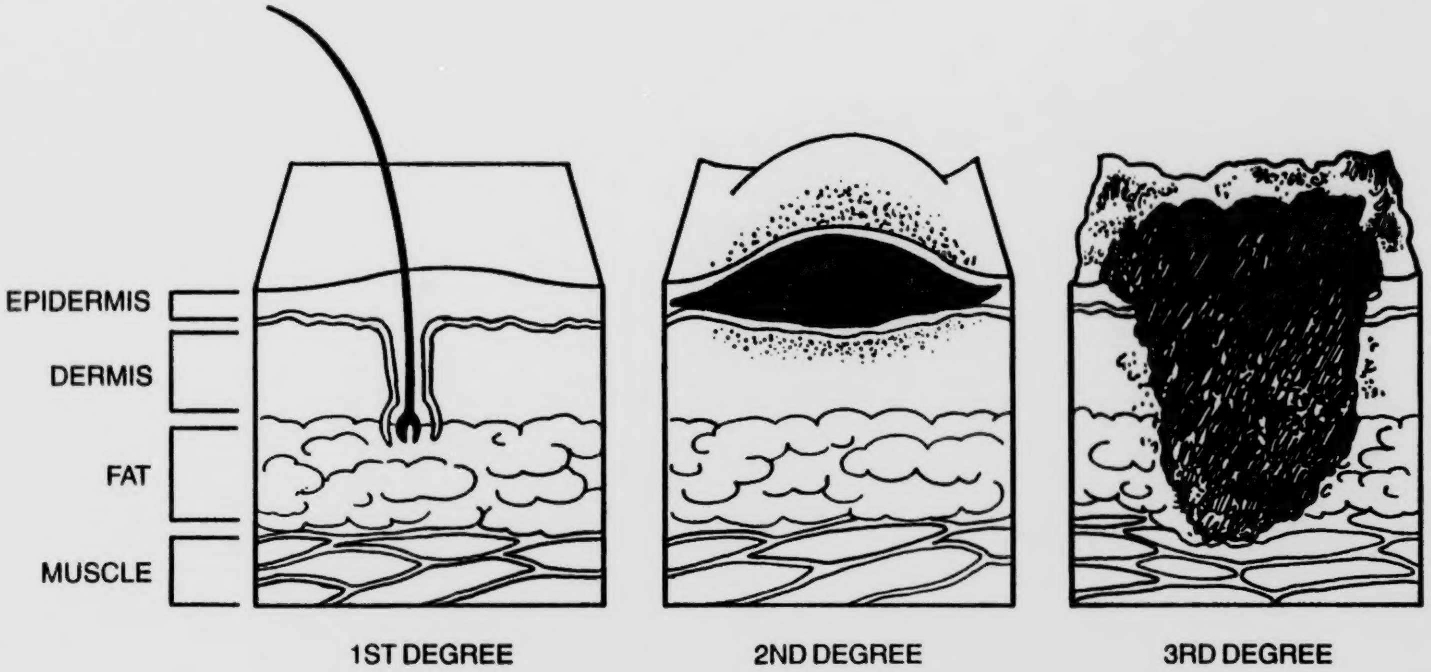

1ST DEGREE 2ND DEGREE 3RD DEGREE

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***See page 413, AAOS Text**

POISONING

I. Primary Survey: Airway, Breathing, Circulation

  A. Check for safety of scene for you and your patient. (Is there some type of hazard present to indicate moving patient before proceeding with your exam)?

  B. Check scene quickly for evidence of poison source.

  C. Use pocket mask for rescue breathing if breathing assist is indicated. DON'T POISON yourself.

II. Secondary Survey:

  A. Ingested Poisons:
    1. Identify and estimate amount of substance ingested. Take container along in to hospital with patient, when feasible.
    2. Contact your Medical Control facility as soon as possible with the substance ingested, so they can contact the Poison Control Center if it is indicated.
    3. Treat ONLY AS PER Medical Control's recommendations.
    4. BE ALERT for vomiting; protect airway and save vomitus.
    5. DO NOT induce vomiting unless directed to do so by Medical Control.

  B. Inhaled poisons: (If hazard of inhaled poison is still present, DO NOT ENTER SCENE without self-contained breathing apparatus)!

    1. Remove patient to fresh air, administer 6-10 LPM oxygen per mask.
    2. Identify substance inhaled.
    3. Estimate duration of exposure to inhaled poison.
    4. Call your Medical Control immediately, and advise them of the nature of the problem and substance.
    5. Treat as per Medical Control's recommendations and transport.

C. Absorbed Poisons:

1. **Identify contaminate! If it will be a hazard to you, use protective clothing and extreme caution.**
2. **Flood skin with copious amounts of water and remove contaminated clothing. (EXCEPTION: if contaminate is dry lime, brush off powder well BEFORE rinsing).**
3. **Call your Medical Control immediately, and advise them of the substance, this will allow them time to contact Poison Control if it is necessary.**
4. **Treat as per Medical Control's recommendations, and transport. Be careful to protect yourself.**

D. Injected Poisons:

1. BE ALERT for respiratory difficulty in patient.
2. Check for medical identification device, and ask patient (if conscious) or family member for the history of allergies.
3. Check patient for marks, rashes, or welts.
4. Try to identify source of injected poison.
5. Transport to hospital immediately, closely monitoring patient's vital signs en route.
6. Notify hospital en route of your patient's problem and status.

III. Special Poisoning Considerations:

A. Poison in eye(s):

1. **Flood eye(s) with lukewarm water continuously for 15 minutes or more. Have patient blink frequently during irrigation.**
2. **Identify contaminant and contact Medical Control.**
3. **After thoroughly rinsing, cover both eyes with moist sterile dressings and transport.**

IV. Unconscious or semiconscious patient:

A. Support respiratory effort if indicated.

B. Administer oxygen per mask at 6-10 LPM.

C. Obtain accurate history of incident:

1. Name and quantity of product or substance ingested, injected, inhaled, or absorbed.
2. Duration of exposure/time elapsed since exposure.
3. Pertinent medical history: chronic illness, conditions, medical problems within the last 24 hours, medications, etc.

D. Transport patient; closely monitor vitals and patency of airway.

E. Do not administer oral agents to any patient unless directed to do so by your Medical Control Facility.

Lesson 23
Environmental Emergencies

Introduction

Exposure to the environment can lead to life-threatening medical problems. The EMT-A must be prepared to provide proper treatment in those situations caused by heat, cold and water.

Objectives

At the conclusion of Lesson #23, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- List 2 signs/symptoms of heat cramps.
- List steps in emergency care of heat cramps.
- List 3 signs/symptoms of heat exhaustion.
- List steps in emergency care of heat exhaustion.
- List 3 signs/symptoms of heat stroke.
- List steps in emergency care of heat stroke.
- List and define 5 ways the body loses heat.
- Define hypothermia.
- List 5 signs/symptoms of hypothermia.
- List 3 steps in emergency treatment of a hypothermic patient when transport time is less than 30 minutes from a medical facility.
- List 3 steps in emergency treatment of a hypothermic patient when transport time is greater than 30 minutes from a medical facility.
- List signs/symptoms of frostbite.
- List circumstances when frostbite should not be thawed outside of a medical facility.
- State the temperature at which water should be maintained when thawing frostbitten parts.
- List steps in emergency treatment of a drowning victim.
- List 5 steps in care of patients with suspected diving-related problem(s).
- Define air embolism (from diving).
- Define decompression sickness.
- State how to contact nearest recompression chamber.

Overview of Lesson Contents

Exposure to Heat

A patient may suffer painful muscle spasms known as heat cramps in the extremities after strenuous exercise.

The cramps will usually be relieved if the patient takes a salt solution.

The most common illness caused by heat is heat exhaustion.

The patient is usually weak, dizzy or faint, has a headache, no appetite and nausea. Vital signs are usually normal. He may appear gray and skin may be cold and clammy.

It occurs when patient works hard in a hot environment.

Muscles and heart need increased blood flow as does the skin.

The patient should be treated as if he were in shock and should be transported to a medical facility if indicated. One liter of one-half strength electrolyte solution may be provided if the patient is conscious.

In heat stroke, the patient's sweating mechanism has broken down and he is unable to lose body heat through the skin.

Important signs are:

Very hot, dry skin.

Coma or a progressive deterioration of responsiveness.

Very high body temperature.

This condition is a true emergency. If body temperature rises too high, brain cells can be injured and the patient may die.

The body should be cooled in any way possible (e.g., cold towels, air from a fan) while the patient is transported to a medical facility where they will likely give the patient an ice-water bath to lower the temperature.

Exposure to Cold.

There are five major ways in which the body loses heat:

Conduction
Convection
Evaporation
Respiration
Radiation

General Cooling of the Body Is Known as Hypothermia.

Exposure to cold, snow or ice can result in a general cooling of the body that can go through the following five stages:

Shivering—an attempt by the body to generate heat. (Does not occur below 90 degrees (F).)

Decreased muscle function—first, fine motor, then gross motor.

Decreased level of consciousness.

Decreased vital signs, slow pulse and slow respiration rate.

Apparent death.

Hypothermia is an acute emergency requiring immediate medical attention. Emergency care includes:

If less than 30 minutes from medical facility:

prevent further heat loss.
handle with care.
add heated oxygen.
transport.

If more than 30 minutes from a medical facility:

prevent further heat loss.
handle with care.
add heated oxygen.
rewarm patient.
prepare for CPR.
transport.

With any hypothermia patients, always monitor respirations and pulse and provide pulmonary and cardiopulmonary resuscitation as required. Resuscitate all hypothermia patients. No one is considered dead until they are warm and dead.

Local Cooling of the Body may result in frostnip or frostbite.

When the body is subjected to excessive cold, the water in cells will freeze; the resulting ice crystals may even destroy the cells.

It may be minor (frostnip), superficial, or deep.

NEVER rub any condition of frostbite; the ice crystals in the tissue can cut and destroy cells.

In frostnip there is a sudden blanching of the skin—the patient is usually unaware of it.

The skin can be warmed by applying firm pressure with a hand (no rubbing) or other warm body part or by blowing hot breath on the spot.

The skin in **Superficial Frostbite** appears white and waxy; it is firm to the touch but the tissue beneath is soft and resilient.

Treatment includes providing dry coverage and steady warmth.

Deep Frostbite occurs when there is actual freezing of the tissue.

The skin is white and feels hard throughout.

This patient needs immediate hospital care. He should be kept warm and resuscitated as necessary.

Treatment of deep frostbite includes:

Rewarm the affected part by immersion in water 105 degrees (F).

Administer oxygen.

Maintain core temperature.

Transport.

NOTE: Do not delay transport for rewarming. NEVER rub any condition of frostbite; the ice crystals in the tissue can cut and destory cells.

Near Drowning

In most drownings, little water enters the lungs since a laryngeal spasm occurs when foreign material is introduced into the larynx.

Direct swimming rescue should be attempted only by personnel trained in lifesaving. Instead, floatable items should be thrown or pushed to the victim.

Immediate pulmonary resuscitation is necessary—before patient is removed from water. CPR must be delayed until the patient is on a hard, flat surface.

If there is a possibility of a diving accident, the patient should be removed from the water on a backboard.

Pulmonary and cardiopulmonary resuscitation should be provided as required.

All pulseless, non-breathing patients submerged in cold water less than 70 degrees (F) should be resuscitated.

Diving Problems

In addition to resuscitation problems, two ascent problems require recompression: air embolism and bends (decompression sickness).

Air Embolism is caused when:

Water pressure on the chest is rapidly reduced and air within the lungs expands. Too rapid expansion ruptures alveoli and damages adjacent blood vessels. A pneumothorax and air embolism can result.

Signs include:

Blotching or itching of skin.

Froth in nose and mouth.

Pain in muscles, joints, tendons, abdomen.

Difficult breathing with chest pain.

Dizziness and vomiting.

Difficulty in seeing properly.

Possible paralysis and coma.

Care for air embolism patients:

Provide basic life support and oxygen.

Place patient on his left side with head and chest lower than feet.

Transport to nearest emergency medical facility.

The Bends are caused when nitrogen is released into the system too quickly.

In a rapid ascent, bubbles become larger and may obstruct the vessels in which they lie.

SIGNS. Signs range from minor skin rashes and joint pains to serious central nervous system complaints. It is called the bends since patient typically bends over from joint pain.

Care procedures are:

Provide basic life support with oxygen.

Transport to recompression chamber.

Pneumothorax may be caused by excessive pressure in the alveoli resulting in spontaneous rupture.

Signs/Symptoms include severe chest pain and dyspnea. Treat as for other pneumothorax.

Study Suggestions

1. The patient has been playing tennis at midday. He is dizzy and has a headache. His speech is slurred and he appears confused. List all possible conditions that might be wrong with the patient. What other signs or symptoms would you check for? How would you care for the patient?

2. The patient fell asleep in the sun. He was wearing bathing trunks. He is shivering and has first-degree burns covering all exposed parts of his body. How would you care for him?

3. An automobile accident is discovered at 6 a.m., evidence suggests that the accident occurred sometime the night before. The patient is unconscious and cold to the touch. Extrication and transport will require a 1 hour delay to the hospital.

4. Describe the procedures for care of deep frostbite.

Lesson 23

ENVIRONMENTAL EMERGENCIES

At the completion of this lesson, you should be able to define and use the following terms correctly.

Heat exhaustion

Heat stroke

Hyperthermia

Hypothermia

Frostbite

Air embolism

The bends

Lesson 24
Psychological Aspects of Emergency Care

Introduction

The EMT-A must be able to communicate effectively with every patient to optimize care. Certain patients present a difficult challenge to the communication process, special training and skills are necessary. Emergency care situations may be very stressful. The EMT must assist patients, bystanders and himself to cope with such stress.

Objectives

At the conclusion of Lesson #24, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Define communication
- List 8 general principles of communication.
- List 2 methods of applying general principles of communication with each of the following groups of patients:
  - —Geriatric
  - —Pediatric
  - —Deaf
  - —Blind
  - —Non-English speaking
  - —Mentally retarded/ developmentally disabled
  - —The confused patient.
- List 6 possible causes for patients displaying disruptive behavior.
- List 4 steps the EMT can take to stabilize a disruptive situation.
- Demonstrate two methods of restraining and transporting patients in the ambulance.
- List four possible responses that a patient's family member may have to sudden death.
- List four possible responses that the EMT may have to sudden death.
- List four possible responses the terminally ill patient may display.
- List four possible responses the family of a terminally ill patient may display.
- List four positive approaches the EMT may take to assist the patient of family in dealing with the effects of crisis.
- List four responsibilities of the EMT-A when responding to suspected child abuse incidents.
- List four signs/symptoms which should lend the EMT to suspect child abuse.
- List 8 signs/symptoms of EMT-A stress syndrome.
- List 4 positive steps the EMT-A may apply to relieve stress.
- List three responses the EMT's family and friends may display in times of stress.
- List three possible methods of relieving stress among the EMT's family and friends.

Overview of Lesson Contents

Principles of Communication.

Communication is: The act of expressing one's thoughts, needs and desires to another.

Communication Effectiveness may be increased by:

- Making contact with patient.
- Being direct and truthful.
- Communicating at the correct level.
- Being aware of nonverbal principles of communication.

Patients Which May Present Communication Challenges

- Don't assume senility or lack of understanding with geriatric patients. Procedures include:
- Use patient's name
- Check for hearing deficit
- Allow time for response
- Ask the patient what makes him most comfortable

Pediatric Patients

May be frightened or modest.

Move slowly and explain procedures in simple terms.

Allow the child to retain crutch, i.e., toy, blanket.

Be honest about pain which may be caused by procedures.

A parent or sibling may be useful to help calm the child.

Use eye level contact.

When dealing with **Deaf Patients.**

Determine if patient can read lips. If so:

- Speak slowly.
- Position self properly so that the patient can see you.

Know and use common sign language representation for:

- Sick,
- Hurt and
- Help

In come cases written messages may be useful.

When treating a blind patient determine if patient has hearing impairments. Don't shout or assume that the patient is also deaf.

Explain incident and procedures in detail before initiating treatment.

With Non-English Speaking Patients:

- Determine level of understanding.
- Use interpreter if available.
- Use gestures.
- Refer to written charts.

When Caring for Confused or Developmentally Disabled Patients, Procedures Include:

- Determining level of understanding
- Speaking at appropriate level
- Waiting for delayed response
- Speaking as you would to any adult
- Evaluating understanding and re-explain if necessary
- Listening carefully

Disruptive Behavior

Any behavior which presents a danger to the patient or others; or **delays** or **prevents** appropriate treatment is referred to as disruptive behavior.

Causes may include:

- Stress response, i.e., hysteria, aggression
- Alcohol
- Drugs
- Neurological trauma
- Metabolic imbalance
- Organic brain syndrome
- Psychiatric disorders, i.e., paranoid schizophrenia, suicidal, etc.

General Approach to Treatment

Assess situation

Protect self, patient and others

Take charge of the situation

Practice effective communication

Don'ts in caring for patients displaying disruptive behavior.

- Diagnose
- Judge
- Label
- Isolate self from team members

Do's

- Describe behavior
- Provide quality care
- Protect yourself

DEALING WITH THE EFFECTS OF CRISIS .

CRISIS is a state of emotional turmoil which may develop over a long term or be caused by sudden disruption or stressful situations

Every emergency patient is in a potential crisis situation.

Specific Crisis Events:

Sudden Death

Caused by Trauma, Acute illness, M.I., Ruptured aneurisms, Diabetic emergencies, Renal failure, Sudden Infant Death Syndrome, etc.

The family response may include any of the following:

Denial
Guilt
Grief
Hostility
Crying
Delayed response
Physiological response
  Nausea
  Vomiting
  Shock

The EMT's response may include feelings of:

Helplessness
Guilt
Avoidance
Anger
Frustration

Other response may include:

Hyperclinical approach
Nightmares
Gallows humor or
Physiological responses

Treatment of Sudden Death

Resuscitate patient unless obviously dead according to State or local protocol, e.g., decapitation

Avoid stock phrases such as: "everything will be all right"

Keep the family informed, don't offer false hope, allow and accept emotional response, e.g., crying, one EMT-A may touch and empathize with family while others care for the patient.

Terminal Disease

Causes of terminal diseases may include:

Aging, cancer, congenital defects, etc.

The patients response to terminal illness follows the following pattern:

Denial
Bargaining
Anger
Depression
Acceptance

Family response may fall into the same range as above, patient's response

- They may be prepared and accepting
- The EMT's response may include feelings:
  - Inadequacy or helplessness and may vary,
  - depending on the age of the patient.
- Treatment of terminal disease problems:
  - Attempt to assess whether the patient and family is prepared for death.
  - Don't isolate the family
  - Encourage the feelings of patient and family and allow for patient's dignity in the dying process.
  - Resuscitate according to State and local protocol. Generally written physician orders are necessary to withhold resuscitation.

Victims of Abuse

- Criminal activities including:
  - Beatings
  - Spouse abuse
  - Rape
  - Attempted murder
- Patient's response may be:
  - Outrage
  - Disbelief
  - Withdrawal
  - Hysteria
  - Depression
- Treatment of victims of criminal acts provide:
  - Quality emergency medical care: commensurate with injuries
  - Maintain the chain of evidence, cooperate with law enforcement officials.
    - In sexual crimes don't allow the victim to bathe, douche, urinate, etc.
    - In treating the patient, disrupt or touch as little evidence as possible
    - Quickly mark body position before moving the patient, if possible
  - Provide emotional support and use a professional approach
  - Be aware of and follow all reporting requirements
  - Request specialized professional assistance e.g., rape counselors, etc. to help the patient.
- Child abuse is a widespread problem involving:
  - 5,000 deaths and
  - 15,000 reported incidents annually
  - 10% of all pediatric patients seen in the emergency room are victims of abuse and the problem knows no social or economic barriers
- Types of abuse include:
    - Physical beatings
    - Emotional
    - Sexual
    - Failure to thrive
    - Neglect
  - The EMT-A must be alert for signs and symptoms including:
    - Obvious wounds, particularly if they are bilateral
    - Signs of other injuries in various stages of healing
    - Wounds not commensurate with the description of the incident
    - Signs of malnutrition
    - Child is unkempt
    - Statements by the child
    - Frequent calls to the same address

Treatment of victims of child abuse require a calm approach. Procedures are:

Maintain a high index of suspicion, treat injuries, provide emotional support

Most importantly maintain a professional attitude

- Don't judge
- Avoid anger and retaliation
- Maintain confidentiality

Know and follow all reporting requirements

STRESS RESPONSE BY THE EMT-A.

Emergency care is a high stress occupation

The EMT-A must recognize common signs and symptoms.

These include:

- Irritability
- Lack of enthusiasm
- Chronic fatigue
- Feeling unappreciated
- Nightmares
- Increased alcohol or drug use
- Decrease in social activities
- Wanting to quit
- Changes in appetite
- Physiological responses, headache, ulcers, muscle aches, inability to concentrate
- Rigidity in thinking
- Avoidance of change

Intervention to relieve stress.

- Develop peer support
- Develop achievable objectives
- Change the environment
- Show and accept emotional feelings
- Counseling or professional help may be needed
- Assessing career appropriateness
- Continuing education to renew confidence
- Maintain a sense of humor

Family and Friend's Response to EMTS

Family and friend may respond in a number of ways.

- There may be a lack of understanding or
- Fear of separation and being ignored
- On call situations cause stress because you can't plan activities

The problem may be relieved by:

- Planning time and sticking to it.
- Share experiences, particularly successes. Informing family and friends about what you are doing, e.g., teach them CPR.

Study Suggestions

1. Practice at least 4 manual signs until you achieve proficiency.
2. Ask your family or friends what they think about your becoming an EMT.
3. Practice talking to a patient with a limiting communication capability such as an elderly person or a child.

Lesson 24

PSYCHOLOGICAL EMERGENCIES

At the completion of this lesson, you should be able to define and use the following terms correctly.

Communication challenges

Developmentally disabled

Delusional

Dependency

Disruptive behavior

Dependent adult abuse

Hallucinations

Incoherent

Paranoid

Rational

Substance abuse

Suicide

Lesson 25
Lifting and Moving Patients

Introduction

Proper patient handling will minimize injuries and discomfort for both patient and EMT-A. This lesson includes principles of moving patients; types, uses and distinguishing features of stretchers; practice in lifting and moving patients with and without suspected spine injuries; and practice in loading and unloading amubulances.

Objectives

At the conclusion of Lesson #25, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Perform the following:
    - —A direct 2 man lift of a patient from the ground and position him/her on a stretcher.
    - —Immobilize the neck and spine of a patient using a short back board.
    - —Immobilize a patient on a long back board and move to a stretcher.
- Define a triage
- List 3 patients who would fall under each triage category

Overview of Lesson Contents

GENERAL CONSIDERATIONS

In general, a patient should not be moved until he is ready for transportation to a hospital. All necessary emergency care should be provided first.

A patient should be prematurely moved only if there is an immediate danger to him or others if he is not moved, such as:

There is fire or danger of fire.

Explosives or other hazardous materials are involved.

It is impossible to protect the accident scene.

It is impossible to gain access to other victims in a vehicle who need life-saving care.

If it is necessary to move a patient, the speed with which he is moved will depend on the reason for moving him, for example:

Emergency Moves are used if there is a fire, the patient will be pulled away from the area as quickly as possible.

Non-Emergency Moves are employed if the patient needs to be moved to gain access to others in a vehicle, due consideration will be given to his injuries before and during movement.

Emergency Moves

The major danger in moving a patient quickly is the possibility of aggravating spine injury and should be used only if absolutely necessary.

In an emergency, every effort should be made to pull the patient in the direction of the long axis of the body to provide as much protection to the spine as possible.

It is impossible to remove a patient from a vehicle quickly, and, at the same time, provide protection for his spine.

If the patient is on the floor or ground, he can be dragged away from the scene by tugging on his clothing in the neck and shoulder area.

It may be easier to pull the patient onto a blanket and then drag the blanket away from the scene.

Such moves are emergency moves only. They do not adequately protect the spine from further injury.

Non-emergency Moves

Generally all injured parts should be immobilized prior to movement.

All injured parts should be protected as much as possible during movement.

In order to protect himself, the EMT should use the following principles in all non-emergency moves:

Keep in mind physical capabilities and limitations and do not try to handle too heavy a load. When in doubt, seek help.

Do not attempt to lower a patient if you feel you could not lift him.

Keep yourself balanced when carrying out all tasks.

Maintain a firm footing.

Maintain a constant and firm grip.

Lift and lower by bending the legs and not the back — keep the back as straight as possible at all times; bend knees and lift with one foot ahead of the other.

When holding or transporting, keep the back straight and rely on shoulder and leg muscles; tighten muscles of the abdomen and buttocks.

When performing a task that requires pulling, keep the back straight and pull using the arms and shoulders.

Carry out all tasks slowly, smoothly and in unison with your partner.

Move body gradually; avoid twisting and jerking when conducting the various patient-handling tasks.

When handling a patient, try to keep the arms as close as possible to the body in order to maintain balance.

Do not keep muscles contracted for a long period of time.

Vehicle Moves

Lifting a patient from a vehicle will require ingenuity depending on the situation.

Patients may be completely mobile or partially mobile and thus can assist in the move.

For completely immobile patients, the rescuer will need to solicit help and move the patient as well as he can under the circumstances.

The student will have an opportunity to practice moving different types of patients from vehicles in the extrication lesson.

Stretchers

Wheeled Stretcher—the standard ambulance cot; it is designed to be rolled and is not easily lifted.

Portable Stretchers—easily lifted devices.

Stair Chairs—designed for patient-handling over stairways and through narrow halls and other confined areas.

Backboards—designed for immobilizing patients with suspected spine injuries; the short board serves as an intermediate device for immobilizing patients who are not in a position that permits direct transfer to the long board, that is, patients seated in cars.

Scoop Stretchers—designed for immobilizing patients with suspected spine injuries; patient must be supine.

Positioning the patient will be dependent upon the patient's condition.

Myocardial infarction patients should be semi-reclining.

Unconscious patients should be on their side in the coma position. Spine injury patients must be immobilized first.

Persons with suspected spine injuries should be immobilized completely.

Legs should be elevated in shock situations.

Direct, Ground Lift, No Spine Injury, Two or Three Rescuers

Rescuers line up on one side of the patient.

Rescuers drop one knee to the ground (the same knee for each rescuer).

The patient's arms are placed on his chest if possible.

The head rescuer places one arm under the patient's neck and shoulder and cradles the patient's head.

The head rescuer places his other arm under the patient's lower back.

The second rescuer places one arm under the patient's knees and one arm above the buttocks.

If there is a third rescuer, he places both arms in the waist area and the other two rescuers slide their arms up to the mid-back or down to the buttocks as appropriate.

On signal, rescuers lift the patient to their knees and roll him in toward their chests (the rescuer's backs are now straight and they are supporting the patient by their arms and chests).

On signal, the rescuers stand, move the patient to a stretcher.

To replace the patient on the ground or on a low cot, the procedure would be reversed.

Extremity Lift No Fractures (or All Fractures Splinted), Two Rescuers

One rescuer kneels at the head of the patient and one at the side by the patient's knees.

The head rescuer places one hand under each of the patient's shoulder while the foot rescuer grasps the patient's wrists.

The foot rescuer pulls the patient to a sitting position; the head rescuer assists by pushing the patient's shoulders up and supporting his back and head with his body.

The head rescuer slips his hands under the patient's arms and grasps the patient's wrists.

The foot rescuer slips his hands under the patient's knees.

Both rescuers crouch on both feet.

They stand simultaneously and move with the patient to a stretcher.

Immobilization On Short and Long Backboards

Support patient's head.

Immobilize neck with collar/blanket/sandbags.

Position board behind patient (shortboard), OR shove board beneath patient (longboard).

Pad board as appropriate and secure straps.

Assure that patient is secure.

Transfer of Patient From Bed to Cot

Direct Carry

Position cot: head end of cot at foot end of bed.

Prepare cot, remove straps etc.

Position patient, supine.

Both EMTs stand between bed and stretcher facing patient.

One EMT-A slides arm under patient's neck and cups patient's shoulder.

Other EMT-A slides hand under hip and lifts slightly.

Head end EMT-A then slides other arm under the patient's back.

Foot end EMT-A places arm underneath hips and calves.

Slide patient to the edge of bed.

Lift patient and curl towards EMT's chest.

Rotate and place patient gently onto cot.

Draw Sheet Method

Loosen bottom sheet.

Position cot, parallel and touching bed.

Prepare cot: adjust cot height, lower rail, remove straps.

Reach across cot.

Grasp sheet at patient's head, chest, hips and knees.

Slide patient gently onto cot.

Similar methods can be used if the patient is on a spine board or without any device underneath the patient (slide transfer).

Maneuvering the Stretcher

Rolling is the preferable method but is restricted to smooth terrain.

When rolling, the foot ends should go first.

Maintain control with an EMT-A at the foot and one at head.

Carrying methods:

- End to end.
  - Preferable in narrow spaces.
  - Limited to level or moderate terrain.
  - Easily unbalanced.
  - Requires strength.
  - EMTs face each other.
- Side carry.
  - More stable.
  - Additional personnel.
  - Safer over rough terrain.
  - Used in wheeled cot into loading ambulance.

Loading the Ambulance

Identify potential patient needs, e.g., airway problems. Select proper position in the ambulance based on needs.

Load hanging stretchers first and then,

Load wheeled stretchers.

Use sufficient manpower in lifting and positioning to ensure safety of the patient and EMTs.

Make certain all cots and patients are secured before moving ambulance.

Triage

Triage means sorting multiple casualties into priorities for emergency care or for transportation to definitive care.

Priorities are usually given in three levels as follows:

Highest Priority

- Airway and breathing difficulties.
- Cardiac arrest — sufficient personnel permitting. Do not tie up manpower for extended periods of resuscitation if numerous other patients need assistance.
- Uncontrolled or suspected severe bleeding.
- Severe head injuries.
- Severe medical problems—poisonings, diabetic complications, cardiacs.
- Open chest or abdominal wounds.
- Shock.

Second Priority

- Burns
- Major or multiple fractures
- Back injuries with or without spinal cord damage.

Lowest Priority

- Fractures of other injuries of a minor nature.

    - Obviously mortal wounds where death appears reasonably certain.
    - Obvious dead.

Procedures in situations requiring triage.

- Most knowledgeable EMT-A arriving in first ambulance must become triage officer.
- A primary survey should be completed on all patients first. Correct immediate life-threatening problems.
- Call for additional assistance if needed.
- Assign available manpower and equipment to priority one patients.
- Transport priority one patients first.
- Notify hospital(s) of number and severity of injuries.
- Triage officer remains at scene to assign and coordinate manpower, supplies and vehicles.
- Patients must be reassessed regularly for changes in condition.

Study Suggestions

1. Using a classmate or friend as a "patient", practice the one man emergency moves covered in the lesson.
2. Working with another classmate and using a classmate or friend as a "patient", practice the direct ground lift and extremity lift.
3. If short and long backboards are available, practice immobilizing patients on the boards. Work with another classmate and use a classmate or friend as a "patient". If backboards are unavailable and no appropriate simulation object is available, practice the procedures involved in supporting the patient's head and applying a cervical collar.
4. Describe how you would position the following patients on a stretcher:
    - Heart attack patient.
    - Unconscious patient.
    - Patient with a suspected spine injury.
    - Patient in shock.
    - Expectant mother who is convulsing.

Lesson 25

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Log rolling

Packaging of patient

Stabilizing of patient

Supine position

Transfer of patient

Lesson 26
Principles of Extrication

Introduction

The EMT-A may be the first at the accident scene and should know simple procedures for gaining access to and disentangling patients. Proper patient packaging and removal will minimize danger of further injury or aggravation of existing injuries. The lesson provides basic hints on gaining access to and disentangling patients from vehicles.

Objectives

At the conclusion of Lesson #26, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- Describe the proper methods and appropriate times to utilize the following extrication equipment:
  - —Porta power
  - —Hand winch
  - —Pry axe
  - —Air chisel (optional)
  - —Cribbing
  - —Bale Hook
  - —Hack saw
  - —Linoleum knife
  - —Screw driver
  - —Spring loaded center punch
  - —Other
- List the location of all extrication equipment on the vehicle.
- Name the agency responsible for providing extrication equipment to a scene and how and when that equipment gets to the scene.

Overview Of Lesson Contents

Basic Considerations

The Role Of The EMT:

His responsibility is to administer necessary care to the patient before extrication and to assure that the patient is removed from the vehicle in such a way as to minimize further injury.

If rescue crews are NOT present, he should be prepared to use prying and cutting tools to gain access to the patient and disentangle the vehicle from the patient.

If rescue crews are present, he should cooperate with their activities but should not allow their activities to endanger the patient.

If rescue crews are present, the EMT should attend to the needs of the patient while rescue activities proceed if possible.

Basic Principles Of Emergency Care.

Patient care precedes extrication unless delayed movement would endanger the life of the patient or rescuer. Patient care should include:

Attention to life-threatening emergencies.

Immobilization of the spine and other fractures.

Cervical and thoracic fractures should be suspected in unconscious patients.

All patients should be packaged and moved carefully to minimize danger of further injury or aggravation of existing injuries.

The Stages Of Extrication Include: Gaining access to patients, attending to life-threatening emergencies, disentanglement, preparation for removal (patient packaging) and removal.

Gaining Access includes the following steps:

Protect self

Stabilize vehicle.

Entering the vehicle through:

Doors
Windows
Roof
Floor

Stabilization Of Patient

Once access has been gained, the patient should be stabilized. Procedures are:

- Primary survey.
- Correct life-threatening problems.
- Stabilize spine.
- Note mechanism of injury.
- Protect from further injury during disentanglement by:
  - Covering
  - Shielding
  - Pad

Disentanglement

Remove wreckage from patient, not patient from wreckage.

When opening doors, try inside handle and lock.

- Use Porta-power.
- Once open, widen to 90 degrees.
  - Three rescuers.
  - Hand winch.

Move seats back by: manual or electric slide control.

Remove the top by cutting posts and folding back.

Displace steering wheel and column and foot pedals.

Preparing Patient For Removal.

Maintain cervical stabilization.

Complete a secondary survey, look for mechanism of injury.

Treat all injuries appropriately. Immobilize spine securely using a:

- Short spine board,
- Long spine board, or
- Commercial immobilization device.

Removal

Move patient not devices.

Make certain there is sufficient manpower available.

Choose the path of least resistance.

Protect the patient from sharp metal.

Study Suggestions

1. Working with another classmate and using a classmate or friend as a "patient," the student should practice packaging patients with spine and/or other injuries and removing them from vehicles.

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Lesson 26

Upon completion of this lesson, you should be able to define and use the following terms correctly.

Basket stretcher

Disentanglement

Extrication

Hazards

Hydraulic unit

Pry

Shore up

Lesson 26

EXTRICATION SYSTEM GUIDELINES

Objective: Safely Get a Rescuer to a Patient

I. ASSESS THE SITUATION
  A. Assessment begins with the "Emergency Call."
    1. Accurate and complete dispatches are essential.
    2. Get a call back number if possible.
  B. Assessment continues while enroute.
    1. Review dispatch provided facts.
    2. Contact scene for additional facts. (Use Law Enforcement Mutual Aid radio freq.)
    3. Review equipment and procedures that may be used.
  C. Visually assess situation as you exist Emergency Vehicle.
    1. Determine all hazards to rescuer and patient(s).
      a. Common Hazards
      Unsecured wreckage, fire, cave-ins, explosions, traffic and trains, electric lines and poles, radiation, chemicals and vapors, snipers, and unruly patients, crowds and media.
    2. Get input from officials and witness on scene.
  D. Develop a plan of action from dispatch provided facts, your assessment, and input from officials and witnesses on scene.

II. STABILIZE THE SITUATION
  A. Implement the plan of action formed above by accomplishing the following, as needed.
    1. Call for additional help and equipment if needed.
    2. Stabilize all unsecured wreckage.
    3. Check for fire hazards and charge a line or have a fire extinguisher near by.
    4. Shore up possible cave-ins.
    5. Determine explosion hazards.
    6. Control, direct, and reroute traffic and trains.
    7. Secure and guard electric lines and poles.
    8. Determine radiation hazards.
    9. Determine chemical and vapor hazards.
    NOTE: in No.s 5, 6, 7, 8 and 9 take proper precautions, evacuate if necessary, and know proper agencies and their phone numbers.
    10. Beware of snipers and unruly patients.
    11. Control crowds and media.

III. GAIN ACCESS
  A. Rescuer(s) should SAFELY gain access to patient(s) within one (1) minute after arriving on scene.
    1. Assessment must be completed.
    2. The situation must be stabilized.
  B. The following steps are recommended.
    1. Try door nearest patient, provided patient(s) are not leaning against it. If stuck go to step #2.
    2. Try all other doors, if stuck, got to step #3.
      a. Patient(s) can assist by unlocking doors, if in rescuers

opinion no further injuries are likely.

3. Explain to patient(s) what you intend to do, even if the are unconscious, and center punch a window away from victim.
4. The first three steps will gain access in 90 to 95 percent of all extrication situations. If the first three steps fail to gain access, refer to skills listed in disentanglement.

IV. STABILIZE PATIENTS

A. Primary responsibility of inside rescuer(s) is to stabilize patient(s).
  1. Do life-threatening portion of patient exam, ABC-SPINE, and repeat as necessary.
    A. Triage if more than one patient.
  2. Treat life-threatening injuries and conditions, and stabilize the spine. (Extrication collar).
  3. Protect patient, reassure patient, and explain ALL procedures and noises. DO THIS EVEN IF PATIENT IS UNCONSCIOUS.

B. Secondary responsibilities.
  1. Communicate with and sometimes direct outside rescuers.
  2. Assist outside rescuers

V. PACKAGE PATIENTS FOR REMOVAL

A. Finish the remainder of the patient exam and do appropriate bandaging and splinting.

B. Apply short boards, long boards, and extrication devices where appropriate.

VI. DISENTANGLEMENT

A. "Removing the Vehicle from the Victim." The rescuer must dictate the terms of disentanglement and removal.

B. Determine a pathway to be used for removal of patient(s).

C. Provide pathway by accomplishing the following, as needed.
  1. Opening and/or removal or doors.
  2. Raising, opening, or removing vehicle roofs.
  3. Removal of window glass.
  4. Removal or cutting of windshields.
  5. Cutting the steering column.
  6. Pulling the steering wheel.
  7. Moving vehicle pedals.
  8. Moving or removing parts of the dash.
  9. Pulling the front seat.
  10. Cutting thru floors and quarter panels.
  11. Handling and reducing impaled objects.

VII. REMOVAL OF PATIENTS

A. Remove patient(s) along pathway provided in step six.
  1. Assure adequate manpower for controlled lifting and moving.
  2. Designate one rescuer to use verbal commands to direct lifting and moving.

B. Extrication is complete when all patients are loaded into emergency medical vehicle.

NOTE: The first four steps must be performed in sequence, for the safety of the rescuer and the well being of the patient(s). Step VI, disentanglement should be done by the outside rescuer(s) while inside rescuer(s) are doing step IV, stabilize patients, and step V package patients for removal.

EMERGENCY RESCUE GUIDELINES
FOR
AIR BAG-EQUIPPED CARS*

Incident with a Fire

First use normal fire extinguishing procedures,
then follow the rescue guidelines below.

Incident with a Deployed Air Bag

Use normal rescue procedures and equipment.

Do not delay medical attention.

DEPLOYED AIR BAGS ARE NOT DANGEROUS.

However, they do produce a dust that may cause minor skin or eye irritation which can be prevented by:

-- Wearing gloves and eye protection
-- Keeping the dust away from the patient's eyes and wounds
-- Removing gloves and washing hands after exposure to the dust

Incident with an Undeployed Air Bag

An undeployed air bag is unlikely to deploy after a crash.

Most incidents will not require rescuers to work in what would be the deployment path of the air bag; therefore, rescue operations can begin without delay.

IN THOSE RARE INSTANCES WHEN SOMEONE IS PINNED DIRECTLY BEHIND AN UNDEPLOYED AIR BAG, SPECIAL PROCEDURES SHOULD BE FOLLOWED:

-- Disconnect or cut both battery cables safely
-- Avoid placing your body or objects against the air bag module, or in what would be the deployment path of the air bag
-- Do not mechanically displace or cut through the steering column, until after the system has been fully deactivated
-- Do not cut or drill into the air bag module
-- Do not apply heat in the area of the steering wheel hub

*Based on information provided to the National Highway Traffic Safety Administration (NHTSA) by the automobile and air bag manufacturers, and coordinated with the U. S. Fire Administration (USFA).

If your questions are not answered below, please contact the NHTSA Office of Occupant Protection, NTS-13, Washington, DC, 20590, or the USFA Office of Firefighter Health and Safety, NETC, Emmitsburg, MD, 21727.

AIR BAG-EQUIPPED CAR EMERGENCY RESCUE QUESTIONS AND ANSWERS

Q1. How does an air bag work?

Most air bag-equipped cars on the road today have a driver-side air bag. A few makes, Lincoln, Mercedes, and Porsche, have both driver- and passenger-side air bags as standard or optional equipment. The air bag is designed to supplement the protection offered by safety belts. In a frontal impact of sufficient severity (comparable to a collision into a solid wall at 10-14 mph or above), sensors in the vehicle detect the sudden deceleration and trigger the inflator module. This causes the solid chemical propellent sealed inside the inflator, principally sodium azide, to undergo a rapid chemical reaction. This reaction produces primarily nitrogen gas, the same gas that makes up 80 percent of the air we breathe. The gas inflates a woven nylon bag packed inside the steering wheel hub or the instrument panel for the front seat passenger. The bag inflates in less than one-twentieth of a second, splitting open its protective cover, and inflating in front of the occupant. As the occupant contacts the bag, the nitrogen gas is vented through openings in the back of the bag, which helps to cushion forward movement.

Because air bags are designed to deploy only in frontal or near-frontal crashes--not in side, rear, or rollover crashes--it is possible that you will be involved in rescuing someone from a car with an air bag that did not deploy.

Q2. How do I identify a car equipped with an air bag?

If the bag has deployed, you will be able to see it drooping from the steering wheel hub or the instrument panel on the passenger side.

If the bag did not deploy, several methods can be used. The steering wheel hub is large and rectangular, (about 6" x 9"). The large hub usually will be covered with a scored, soft plastic material. The words, "Supplemental Inflatable Restraint," "Air Bag," or initials such as "S.I.R.," or "SRS," may be embossed somewhere on the surface. In most cases, the Vehicle Identification Number (VIN) can be used to determine the presence of an air bag. Exhibit 1 shows the codes used by the auto manufacturers. Some manufacturers indicate the presence of an air bag system by placing placards under the hood and on the driver side windshield pillar.

If you cannot determine whether the car is equipped with an air bag, you should assume that it has one, particularly if it's a late model car, and follow the rescue guidelines for air bag cars.

Q3. Is smoke produced during deployment?

There are three kinds of "smoke." First, many people mistake the corn starch or talcum powder used to lubricate the bag as smoke. These substances should not be a problem for rescue workers or accident victims. Second, a sealant which is used to prolong the life of the air bag system can smoke when the air bag is deployed. This smoke dissipates rapidly and should not be a cause for concern. Lastly, during deployment, small particles from inside some bag systems are vented into the passenger compartment. These airborne particles look like smoke, and some are deposited as a powdery residue on and around the bag.

Q4. Is the air bag hot?

The bag itself will not be hot. Some components within the air bag module will be hot for a short time, but they are relatively inaccessible and should pose no threat to rescue personnel or crash victims. However, personal contact with the steering wheel hub should be avoided for at least 15 minutes after deployment.

Q5. What about the powdery residue on and around the air bag?

The residue is primarily corn starch or talcum powder, which is used to lubricate the bag as it deploys, and by-products of the chemical reaction that produces the nitrogen gas to inflate the air bag. This residue may contain a small amount of a potential skin irritant, sodium hydroxide.

The same gloves and eye protection that rescuers would normally wear to protect themselves (from sharp metal edges, glass, or from bodily fluids) also will prevent any irritation to the skin or eyes resulting from the residue released during deployment. Thus, the potential for this type of exposure is not severe enough to warrant delaying rescue operations. Hands should be washed with mild soap and water after handling a deployed bag. Also, avoid rubbing your eyes, eating, or smoking after handling the bag until you have removed the gloves and washed your hands. Rescuers also should take care to avoid introducing the residue into the eyes or any wounds of the patient. If the residue gets into the eyes, they should be flushed with water.

Q6. Is there any sodium azide in the residue? Is it harmful?

There is no detectable amount of sodium azide residue present in the passenger compartment after an air bag deployment. Sodium azide, a component of the air bag inflator propellent, converts to the nitrogen gas used to inflate the air bag. Sodium azide in its solid state is toxic. But since it is hermetically sealed in a very strong metal container, which itself is located inside a protective housing within the steering hub, it is unlikely that rescue workers will be exposed.

Q7. If an undeployed air bag module is somehow ruptured, what precautions should be taken?

In the unlikely event that the canister containing the sodium azide-based propellent is ruptured, any unburned propellent will be found in a variety of pressed tablet forms. Do not touch or ingest any exposed propellent or expose it to an ignition source. As in all other rescue operations, rescuers should wear gloves and eye protection.

Q8. Is the sodium azide canister likely to explode during a car fire?

No. The air bag is designed to inflate normally in the event that a vehicle fire causes the canister to be heated above 300° F. Consequently, it is possible that the air bag will deploy in a car fire, but there should be no fragmentation of the inflator.

Q9. If there is a fire in an air bag car, can water be used to extinguish it?

Yes. Any effective fire-fighting medium, including water, may be used to extinguish a fire in an air bag-equipped car.

Q10. Is it all right to breathe the passenger compartment air after an air bag has deployed?

Chemical analyses of deployment by-products show no reason for concern. Also, tests have been conducted with volunteers, chronic asthmatics known to be highly susceptible to airborne particles. These tests showed that the atmosphere produced by an air bag inflation posed no respiratory system hazard to the asthmatics studied.

Q11. What has been the experience of crash test personnel in dealing with air bag-equipped cars?

NHTSA has crash tested more than 70 cars with air bags. The test engineers and technicians who regularly handle deployed air bags and test dummies have reported no ill effects from their repeated exposure to the products of air bag deployments.

Q12. If the air bag did not deploy in the crash, is it likely to deploy after the crash?

No. The sensor devices used to activate the system are designed to respond only to the type of violent forces present during a crash. It is unlikely that the same type of forces will be created during rescue operations.

In most cases, rescue operations can proceed normally and without delay. In the unlikely event that a driver or passenger is pinned behind an undeployed air bag, it will be necessary to take special precautions (see Q15).

Q13. If the air bag(s) did not deploy in the crash, can the system be deactivated?

The electrically activated systems used on most air bag-equipped cars can be deactivated. First, disconnect or cut both battery cables. This will begin the deactivation period for the backup power system that is part of most electrically activated systems. For some vehicle makes, deactivation will occur in a matter of seconds; others take a few minutes, (see Exhibit 2). Mechanically activated systems, used only on 1990 Jaguar coupes and convertibles, cannot be deactivated in the field.

Q14. Should rescuers wait for the system to be fully deactivated before proceeding with rescue operations?

Except for the special case of someone being pinned behind an undeployed air bag, rescue operations can and should begin immediately. Rescue workers should not place themselves or any objects on the air bag module (the face of the steering wheel hub), or in what would be the deployment path of the air bag.

Q15. What if someone is pinned behind a steering wheel or instrument panel with an undeployed air bag?

In the unlikely event that a driver or front seat passenger is pinned behind an undeployed air bag, special procedures should be followed.

If circumstances permit, wait for the system to be fully deactivated before attempting to remove the victim, (see Q13 for deactivation procedures).

You need not wait to provide medical attention, so long as you do not place your body or any objects on the air bag module, or in what would be the deployment path of the air bag.

If the patient must be removed at once, extrication efforts should be performed from the side of the entrapped victim, and away from the potential deployment path of the air bag. Do not place your body or objects against the air bag module. Do not mechanically displace or cut through the steering column unless the air bag system has already been fully deactivated. At no time, should anyone drill into the air bag module, or apply heat (above 300°F) in the area of the steering wheel hub.

In the case of the mechanically activated system currently found only on 1990 Jaguar coupes and convertibles, extreme care should be taken to avoid sharp, jolting impacts to the steering column, particularly in a forward or rearward direction. Cutting of the steering wheel rim or the column is permissible, if the previously mentioned type of impacts can be avoided.

NOTE: Crashes that result in victims being pinned behind an undeployed air bag will be rare. NHTSA has not heard of such a case among the thousands of crashes documented to date. An unusual combination of circumstances, for example, a direct side impact which buckled the floor upward beneath the victim, would have to be present to trap someone without deploying the air bag.

Q16. Occasionally we use damaged cars for rescue training purposes. The cars are scrapped after we finish the training. Should we take any precautions to prevent an unwanted deployment during training?

Before using an air bag-equipped car for training purposes, deploy the air bag. A procedure for deploying the air bag can be found in the service manual provided by each manufacturer to its dealers. Contact the car dealer for assistance.

EXHIBIT 1

VEHICLE IDENTIFICATION NUMBER (VIN) CODES FOR DRIVER- AND PASSENGER-SIDE AIR BAGS

MAKE	SERIES	MODEL YEARS	VIN POSITION	VIN VALUE	TYPE*
ACURA	LEGEND	1988-91	4-5	KA	D
	NSX	1991	4-5	NA	D
AUDI		1989-91	6	5	D
BENTLEY		1990-91	8	D	D
BMW		1986-91	8	1	D
BUICK		1990-91	7	3	D
CADILLAC		1989-91	7	3	D
CHEVROLET		1990-91	7	3	D
CHRYSLER		1988-91	4	X or Y	D
	TC MASERATI	1991	7	2	D
DODGE		1988-91	4	X or Y	D
FORD		1985-91	4	C	D
INFINITI		1990-91	8	C	D
	G-20	1991	8	C	D
ISUZU		1990-91	7	3	D
JAGUAR	PALLETTE COLLECT	1990	5	W	D
	XJS	1990-91			
	CLASSIC COLLECT	1991			
LEXUS		1990-91	8	E or T	D
LINCOLN		1990-91	4	C	D
		1989-91	4	L	D/P
MAZDA	MX-5	1990-91	4-8	NA351	D
	RX-7/Convertible	1990-91	4-8	FC352	D
MERCEDES BENZ		1984-91	8	B or D	D
		1989-91	8	E	D/P

*D = DRIVER-SIDE AIR BAG
D/P = DRIVER-SIDE AIR BAG and PASSENGER-SIDE AIR BAG

EXHIBIT 1 (Continued)

MAKE	SERIES	MODEL YEARS	VIN POSITION	VIN VALUE	TYPE
MERCURY		1985-91	4	C	D
MITSUBISHI		1990-91	4	X	D
NISSAN		1987-88	8	B	D
		1989-91	8	C	D
OLDSMOBILE		1988-91	7	3	D
PLYMOUTH		1988-91	4	X or Y	D
PONTIAC		1989-91	7	3	D
PORSCHE		1987-91	6	2	D/P
ROLLS ROYCE		1990-91	8	D	D
SAAB	900	1990-91	5	L or K	D
	9000	1988	5	L	D
	9000	1989-91	5	L or K	D
TOYOTA	SUPRA	1990-91	4-8	MA70M; MA70N MA71M; MA71N	D
	CELICA	1990-91	4-8	ST88P; ST87F ST87N; ST85N AT86F; ST87K	D
	MR2	1991	4-8	SW21M; SW21N SW22M; SW22N	D
VOLKSWAGEN		1989	6	9	D
	Cabriolet	1990-91	6	5	D
VOLVO		1989-91	5	A	D

EXHIBIT 2

DEACTIVATION TIMES FOR AIR BAG BACKUP POWER SUPPLY

VEHICLE MAKE	TIME
Acura	15 seconds
Audi	10 seconds
Bentley	30 minutes
BMW	20 minutes
Chrysler	2 minutes
Ford	*
GM	10 minutes
Isuzu	10 minutes
Lexus	20 seconds
Mazda	10 minutes
Mercedes	1 second
Mitsubishi	30 seconds
Nissan	10 minutes
Porsche	10 minutes
Rolls Royce	30 minutes
Saab	20 minutes**
Toyota	20 seconds
Volvo	10 seconds
VW (Cabriolet)	10 minutes

*MY 1985-89 = 0; MY 1990 = 15 minutes; MY 1991 = 1 minute if positive battery cable is shorted to ground, 15 minutes if not shorted out

**0 Seconds if panel beneath steering column is removed & orange connector to air bag module is disconnected

Lesson 27
Practical Lab: Extrication

Introduction

The EMT-A is often the first trained person at the scene. In those instances his responsibilities may go beyond patient care and may include gaining access and extrication. In areas where rescue crews are not available the EMT-A may be routinely responsible for such activities. As with other skills taught in the course, practice is necessary to attain and retain proficiency.

Objectives

At the conclusion of Lesson #27, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Demonstrate on programmed patients, the techniques of lifting and moving of patients taught in Lesson 25 in conjunction with the principles of extrication in Lesson 26.

—Demonstrate on appropriate vehicles the techniques of gaining access to entrapped or entangled patients by use of equipment demonstrated in Lesson 26.

—Demonstrate the correct usage of short and long boards in stabilizing and removing a programmed patient from a vehicle.

Study Suggestions

1. Review all material covered in Lesson 25 and 26.
2. Practice placing fellow classmates on short and long spineboards.

Lesson 28 Test and Evaluation: Medical Emergencies, Emergency Childbirth, Environmental Emergencies, Lifting and Moving

Introduction

This lesson provides for interim evaluation of student knowledge and skills. Each student completes a written examination designed to evaluate attainment of knowledge objectives specified for Lessons 19 through 26. Each student performs each skill for an instructor ahd is evaluated on his performance.

Objectives

At the conclusion of Lesson #28, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Successfully complete a written examination reflecting the knowledge taught in Lesson 19, 20, 21, 22, 23, 24, 25 and 26 of the Basic Emergency Medical Technician: National Standard Curriculum.

—Successfully demonstrate through practical application on appropriate programmed patients or manikins, selected representative skills taught in Lessons 19, 20, 21, 22, 23, 24, 25, and 26 of the Basic Emergency Medical Technician: National Standard Curriculum.

Note: Lessons 25 and 26 may be only briefly evaluated as it is assumed proficiency was demonstrated during those lessons.

Study Suggestions

1. Review all material covered in Lessons 19 through 26.
2. Practice all skills in those lessons until proficiency is achieved.

Lesson 29
Ambulance Operations I

Introduction

This lesson provides the student with some knowledge of and familiarity with the operational aspects of the EMT's job in the area in which he will be working. It covers laws regulating operation of emergency vehicles, factors contributing to safe driving, maintaining a safe and ready vehicle, EMT-A records and reports and communication systems. Specific lesson contents will vary depending on the area in which services are provided. The lesson also includes a review of results of the written and practical examinations administered in the previous lesson.

Objectives

At the conclusion of Lesson #29, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

- Quote all laws relating to his/her operation of the ambulance and privileges in any or all of the following categories:
  - —Speed
  - —Warning lights
  - —Sirens
  - —Right-of-way
  - —Parking
  - —Turning
- List 4 contributing factors to unsafe driving conditions.
- Describe in narrative the considerations that should be given to:
  - —Requests for escorts
  - —Following an escort vehicle
  - —Intersections
- List agency contact capabilities of all two-way radio channels in the ambulance.
- List the correct radio use procedures in the following phases of a typical run:
  - —To the scene
  - —At the scene
  - —To the facility
  - —At the facility
  - —To the squad station
  - —At the squad station
- List the proper method of initiating and terminating a radio call.
- Demonstrate proper techniques in use of a radio.
- List proper sequence of delivery patient information.
- Describe what information is required in each area of the trip ticket and how it should be entered.
- Describe where trip report forms should be left and how they are used.
- List all State and/or local record and reporting requirements.

Overview Of Lesson Contents

Driving An Emergency Vehicle

Learn State and local laws, regulations or ordinances in the area relative to the operation of an emergency vehicle, including as appropriate:

Vehicle parking or standing regulations.
Procedures at red lights, stop signs and other intersections.
Regulations regarding speed limits.
Exemptions from following direction-of-movement regulations or specified turns.
Standard emergency or disaster routes.
Use of audible signals, e.g., siren.
Use of visual signals, e.g., lights.

Factors That Might Make An EMT Use Unsafe Driving Habits.

- Lack of expertise in the dispatcher.
- Inadequate equipment in the ambulance.
- Inadequate training of the EMT-A.
- Inadequate driving ability.

Factors Contributing To Safe Driving. The EMT-A must:

- Be alert to changing weather and driving conditions.
- Follow specified routes for routine runs but has alternate routes for contingencies.
- Use extreme left-hand land on multilane highway.
- Drive defensively.
- Use care in exercising the right-of-way privilege.
- Exercise care in use of siren.
- Maintain safe following distances.
- Request other emergency assistance (e.g., police) as needed.

ESCORTS and multiple vehicle responses are extremely dangerous and should be used only if unfamiliar with the location of patient or hospital.

- Neither vehicle should use lights or sirens.
- Provide for a safe following distance.

Intersection Accidents. These are the most common type and include:

- Motorist arrives at intersection as light changes so he doesn't stop.
- One emergency vehicle follows another too closely and waiting motorist is not expecting it.
- Vision is obstructed by vehicles and a pedestrian may be struck.

Records and Reports

General Considerations. Information must be obtained and records maintained to:

- Provide for continuity of care.
- Furnish source of information for evaluating quality of care.
- Provide data for analysis of causes, types and degree of illness and injury requiring emergency care.
- Furnish legal evidence and EMT protection.
- Provide administrative records.

Although records are important, they never take precedence over emergency care.

Record forms vary but certain information is typically obtained; for example:

Patient's name, age, sex, address.

Type of injury or nature of illness.

- Mechanism of injury.
- Location of patient when first seen and treatment.
- Rescue measures preceding emergency care.
- Findings of primary and secondary survey.
- Care given at site or during transport.
- Vital signs, patient's condition and changes in vital signs during transport.
- Hospital to which patient was taken.
- Disposition of patient's valuables.
- Signature of patient or relatives if patient care is refused.
- Procedures followed and disposition of patient in the event of death.
- Dying statements.
- Circumstances involved in homicide, suicide, rape.
- Statements made by patient or others that might serve as legal testimony.
- Administrative information, i.e.:
  - Date of call.
  - Time of call.
  - Name and telephone number of caller.
  - Time of dispatch.

Time of arrival at scene.
Time of leaving scene.
Time of arrival at emergency room.
Time of leaving emergency room.
Time of return to base.
Patient's insurance identification.
Name of dispatching agency.
Names of EMTs responding to the call.
Type of run to scene—emergency/routine.
Type of run to hospital—emergency/routine.

EMTs should not disturb suicide notes and safeguard homicide weapons for the proper authorities when they are not present at the scene of the emergency.

All information obtained from the patient or his surroundings should be considered confidential and should be released only to the proper authorities.

Communications

Important and Useful in the following manner:

Detection and reporting of accidents.
Assignment of calls to appropriate service providers.
Maintaining contact between the vehicle, dispatcher and hospital.
Alerting of other emergency resources.
Relating information on patient's condition and obtaining information on care of the patient.
Distributing patients among hospitals.
Alerting hospital emergency departments of type of patient being brought in.

Typical Communications. Review of typical communications equipment available and procedures used in the area. Including:

Channel and frequency allocation.
Procedures during each phase of the run.
Initiating and terminating a call.
Sequence of patient information.

Study Suggestions

1. You have loaded your ambulance with two victims of an automobile accident. One has a fractured pelvis and is in severe shock. The other is unconscious and is breathing with great difficulty. You are the driver of the ambulance. Describe all procedures you would follow until your patients are deposited at the hospital. Include communications and driving procedures.

2. Complete one copy of each report required of EMT's in your area for a simulated case. Be prepared to describe what each completed report means.

Lesson 29

At the completion of this lesson, you should be able to define and use the following terms correctly.

Ambulance

Ambulance repeater

Audible signals

Base station

Channel

Communications

Dedicated line

Dispatcher

Federal Communications Commission (FCC)

Hot line

Land mobile service

Mobile repeater station

Multiplex

Patch

Scanner

Telemetry

Lesson 29

TEN CODES

✓10-1	Unable to copy - change location
✓10-2	Signals good
✓10-3	Stop transmitting
✓10-4	Acknowledgement
10-5	Relay
✓10-6	Busy - stand by unless urgent
✓10-7	Out of service (give location and/or telephone number)
✓10-8	In service
✓10-9	Repeat
✓10-10	Fight in progress
10-11	Dog case
✓10-12	Stand by (Stop)
10-13	Weather and road report
10-14	Report of prowler
10-15	Civil disturbance
10-16	Domestic trouble
10-17	Meet complainant
10-18	Complete assignment
✓10-19	Return to ____________________
✓10-20	Location
10-21	Call ___________ by telephone
10-22	Disregard
✓10-23	Arrived at scene
✓10-24	Assignment completed
10-25	Report in person to (Meet) ____________
10-26	Detaining subject, expedite
10-27	Drivers license information
	D.L. 1 -- To check for valid license
	D.L. 2 -- To check for previous O.M.V.I. convictions
	D.L. 3 -- To check for age or description or serial numbers, etc
	D.L. 4 -- To check complete driving record
10-28	Vehicle registration information
10-29	Check records for wanted
10-30	Illegal use of radio
✓10-31	Crime in progress
✓10-32	Man with gun
✓10-33	EMERGENCY
10-34	Riot
10-35	Major crime alert
✓10-36	Correct time
10-37	Investigate suspicious vehicle
10-38	Stopping suspicious vehicle (give station complete description)
✓10-39	Urgent - use light and siren
✓10-40	Silent run - No light or siren
10-41	Beginning tour of duty
10-42	Ending tour of duty
10-43	Information
10-44	Request permission to leave patrol __________ for ___________
10-45	Animal carcass in ____________ lane at ____________
10-46	Assist motorist

10-47	Emergency road repairs needed
10-48	Traffic standard needs repairs
10-49	Traffic light out
✓10-50	Accident - F, PI, PD
	T-1 Motor vehicle hit same
	T-2 Motor vehicle hit pedestrian
	T-3 Motor vehicle ran off roadway
	T-4 Motor vehicle overturned
	T-5 Motor vehicle hit fixed object
	T-6 Motor vehicle hit train
✓10-51	Wrecker needed
✓10-52	Ambulance needed
✓10-53	Road blocked
10-54	Livestock on highway
10-55	Intoxicated driver
✓10-56	Intoxicated pedestrian
✓10-57	Hit and run -- F, PI, PD
10-58	Direct traffic
10-59	Convoy or escort
10-60	Squad in vicinity
10-61	Personnel in area
10-62	Reply to message
10-63	Prepare to make written copy
10-64	Message for local delivery
10-65	Net message assignment
10-66	Message cancellation
10-67	Clear to read net message
✓10-68	Dispatch information
10-69	Message received
10-70	Fire alarm
10-71	Advise nature of fire (size, type, and contents of building)
10-72	Report progress on fire
10-73	Smoke report
10-74	Negative
✓10-75	In contact with
✓10-76	In route
10-77	ETA (estimated time of arrival)
10-78	Need assistance
✓10-79	Notify coroner
10-80	
10-81	
10-82	Reserve lodging
10-83	
10-84	If meeting ____________ advise ETA
10-85	Will be late
10-86	
10-87	Pick up checks for distribution
10-88	Advise present telephone of ___________
10-89	
10-90	Bank alarm
10-91	Unnecessary use of radio
10-92	
10-93	Blockade
10-94	Drag racing
10-95	

10-96	Mental subject
10-97	
10-98	Prison or jail break
10-99	Records indicate wanted or stolen

Signal PR	Portable Radar
Signal PT	Portable Tape
Signal 100	Night patrol

Lesson 30
Ambulance Operation II

Introduction

Certain additional non-medical roles including: vehicle inspection, equipment maintenance, traffic control and other duties are routinely assumed by EMT's. Familiarity with these roles is necessary to ensure the overall competency of the EMT-A.

Objectives

At the conclusion of Lesson #30, the instructor will have provided sufficient information, demonstration and practice to the student, to ensure his/her ability to:

- Identify all vehicle systems and equipment requiring daily inspection.
- Identify the proper storage location of all equipment carried on the ambulance.
- Describe the non-medical role of the EMT at:
  —Traffic accidents
  —Crime scenes
  —Emergency Department
- List all local and State protocol to be followed during any phase of an ambulance run.
- List at least 6 of the 8 phases of an ambulance run.

Overview Of Lesson Contents

Phases of an Ambulance Run

Pre-Run: Phase 1

Vehicle maintenance.

General Considerations. The vehicle requires routine maintenance, daily inspection, and inspections after each run.

Daily Inspections. Inspection should include:

Inspection of vehicle systems

Fuel
Oil
Fluid circulation system
Battery
Brakes
Tires
Wheels
Headlights
Stop lights
Turn signals
Emergency lights
Wipers
Horn
Siren
Windows
Door closing and latching devices
Communication equipment
Power systems
Air-conditioning, heating and ventilating systems

Inspection and inventory of emergency care equipment and supplies.

Cleanliness of exterior and interior of vehicle.

Inspections After Each Run.

There should be a sufficient supply of fuel depending on expected duration of runs.

There should be a full supply of emergency care equipment and supplies.

The interior of the vehicle and equipment and supplies should be cleaned or decontaminated as necessary.

Equipment Maintenance.

Checked and maintained.

Restocked and repaired.

Standardized placement.

Dispatch: Phase 2: should include the following:

Other pre-run considerations revolve around organization of personnel, equipment, resources and vehicles.

Central access

- 24 hour availability
- Trained personnel
- Dispatch information
  - Name, location and number of caller.
  - Location of patient.
  - Number of patients and severity.
  - Other special problems, e.g., hazardous material spill.

Enroute To The Scene: Phase 3:

- Use or non-use of emergency privileges dependent upon dispatch information.
- Assignment of personnel.
- Assignment of projected equipment needs.

At The Scene: Phase 4

- Park safely.
- Identify and control hazards.
- Gain access.
- Provide patient care.
- Prepare patient for transport.
- Move to, load and secure patient in ambulance.

Enroute To The Hospital: Phase 5

- Use prudent driving practices.
- Additional care and monitoring of the patient.
- Completion of patient forms.
- Notification of hospital.
- Reassuring patient.

At The Hospital: Phase 6

- Transfer of patient.
- Transfer of records.
- Equipment exchange.

Enroute To Station: Phase 7

- Advise dispatch
- "Straightening up" vehicle

Post Run: Phase 8

- Inspect and fill vehicle.
- Inspect and restock supplies.
- File reports.
- Clean vehicle.
- Notify dispatch.

Study Suggestions

1. Complete a daily inspection on an ambulance using a standardized form.
2. Become familiar with each compartment of the ambulance and list where each item of equipment is carried.
3. Given a simulated ambulance call, list the responsibilities you might have during each phase of the run.

Lesson 31
Farm Industrial Accidents

Introduction: This session investigates farm accidents, basic procedures to assist in rescue and provide emergency care. Anhydrous ammonia and pesticide incidents are included.

Objectives: Upon completion of this lesson, the learner will provide basic rescue and care for person in farm accident.

. Rescue and provide care for victim of tractor overturn.
. Provide basic rescue and emergency care for persons involved in farm accidents with harvesting equipment.
. Provide basic rescue and emergency care for persons involved in auger and elevator accidents.
. Provide basic rescue and emergency care for persons involved in flowing grain entrapment.
. Provide basic rescue and emergency care for persons exposed to poisonous gases.
. Recognize dangers associated with pesticides and discuss rescue and emergency care.

Competencies:
Emergency treatment for victims of tractor accidents.
Emergency treatment for victims of harvesting equipment.
Emergency treatment for victims of auger and elevator accidents.
Emergency treatment for victims of grain bin entrapment.
Emergency treatment for victims of gaseous accidents.

Outline:
I Definition and description
II Tractor overturns
III Harvesting equipment
IV Auger and elevator accidents
V Flowing grain entrapment
VI Gases - silo-gases, anhydrous ammonia, manure pits
VII Pesticides

Lesson 31
Terminology List

At the completion of this lesson, you should be able to define and use the following terms correctly.

Auger

Block and stabilize

Disassembly

Entanglement

Entrapment

Fermentation

Flammable

Fumigants

Pesticide

PTO Shaft

Suffocation

Lesson 31

Assessment and Treatment of Various Gases (silo and manure pit)

Gas	Characteristic	Assessment	Rescue and Treatment
Ammonia (NH_3)	Heavier than air, so near bottom. Sharp odor.	Irritation of respiratory tract. Asphyxiation.	Wear self-contained breathing apparatus. Take victim to fresh air and give CPR as needed.
Carbon dioxide (CO_2)	Heavier than air. No odor.	Dyspnea, headache, drowsiness, asphyxiation.	Wear self-contained breathing apparatus. Take victim to fresh air. CPR as needed.
Hydrogen sulfide (H_2S)	Heavier than air. Smells like rotten eggs.	Irritated eyes, respiratory tract, headache, dizziness, nausea, unconsciousness, and death.	Wear self-contained breathing apparatus. Take victim to fresh air. CPR as needed.
Methane (CH_4)	Lighter than air, so rises to top.	Mild asphyxiant. Often causes explosions.	If methane is present, there is a high probability of cardon dioxide also being present. Assume a contaminated atmosphere, unless ventilation and testing prove otherwise. Wear self-contained breathing apparatus and have fire department standby with a hose line. Take victim to fresh air. CPR as needed.
Nitrogen dioxide (NO_2)	Heavier than air. Smells like bleach.	Irritate eyes, nose, and throat, dyspnea and fever, death.	Wear self-contained breathing apparatus. Take victim to fresh air and provide CPR.

FARM ACCIDENTS: APPROACHES FOR EMS

I. Introduction - Factors which affect rural EMS care.
  A. Farmers at risk:
    1. Farmers make up only 2 to 3% of the U.S. population, but farming is "the" most hazardous occupation in the U.S. on a per capita basis.
    2. A 1988 ISU study shows Iowa farmers have an accident rate of 1/5.6 farmers per year. The study's definition of accident is one which requires attention by a physician.
  B. Time - IT IS NOT ON OUR SIDE!!!!
    1. The Gold Hour Philosophy - is deeply rooted in agricultural related EMS care. A maximum of 1 hour from the time of the accident to the patient being on an operating table is not always possible. Trauma sometimes needs specialized emergency care (e.g., neuro surgery, limb attachment, etc.) and access to this care from the rural areas is limited which adds even more time for the patient to reach the care he needs.
    2. Farm equipment is not made like a passenger car. Rarely will you be able to extricate a patient from farm equipment with the tools that are carried on an ambulance.
  C. Why do accidents occur?
    1. Physical:
      a. Strength - Is the farmer an elderly man not capable of lifting or doing what he once did?
      b. Reaction Time - Has the farmer been up late too many nights in a row trying to get the crop out?
      c. Body Size - Can an overweight man run away from the bull like he did when he was younger and thinner?
      d. Age - As we get older we start to lose our hearing and our vision.
    2. Psychological:
      a. Temper - After the auger plugs for the third time maybe the farmer forgets to replace the shield.
      b. Anxiety - I have to get this crop out before it rains tomorrow.
      c. Apathy - I'm getting foreclosed on next week anyway, who cares if I get the crop out.

II. Common Care Considerations of Farm Accidents.
  A. PROTECT YOURSELF! Check for hazards first!
     Entanglements with electrical lines, toxic silo or pit gasses, chemicals, and unstable scenes (such as hillsides with tipped equipment) are all hazards to the rescuer, patients and bystanders. The scene must be under control BEFORE patient care can begin. Call ancillary personnel with expertise to stabilize the hazardous situation.
  B. Rules of thumbs for coping with farm machinery.
    1. Turn the power to the machine off FIRST! - Do not become the second victim. If you do not know how to shut the equipment down, DO NOT EXPERIMENT! Get someone to the scene who does know how to do it.
    2. NEVER use machine power to get a patient out of that same machine. If a patient is caught in a machine, do not reverse

the direction of the machine to get the patient out. It is difficult, if not impossible, to control the machinery in reverse precisely enough to prevent further injury to the patient. Control is the key and this is best done by hand.

3. If you do not know how the machinery will react during the extrication - wait until someone who does know can get there. The wrong pressure applied in one area could release a spring, etc. and cause further injury.

III. Tractor Accidents

A. Facts - Who and How:

1. Distribution by Age:
0 - 14 yrs. ------ 7%
25 - 64 yrs. ----- 70%
> 64 yrs. -------- 4%

2. An ISU study showing how people were injured involving tractors:
Falls from -------- 13% of all tractor injuries
Overturns -------- 58% (Older tractors with a very narrow wheelbase in the front are especially prone to rollover)
PTO --------------- 3%
Other ------------- 23%

3. Tractor use at the time of the accident:
Harvesting/tillage ---------------- 10%
Traveling to field ---------------- 14%
Run-a-ways ------------------------ 6%
Stationary (PTO use) -------------- 10%
Parked ---------------------------- 60%

B. Rollovers:

1. Accident Mechanism:

a. 89% of rollovers are to the side.
At 15 to 25 miles per hour, which is "road gear" for most tractors, it is very easy to drop one wheel off the edge of the road and rollover. Driving too fast over bumps (in a field or on the road) will also cause a tractor to tip. Additional equipment (e.g., front end loaders) can also decrease the tractor's stability on steep inclines.

b. 10% of rollovers are to the rear.
There is no place for the farmer to go but straight back and that is where the tractor will also go. A high percentage of these rollovers end up in fatalities.

1) Risk situations for tractor rollovers are using the tractor improperly for pulling and backing down steep inclines. A drawbar on the back of the tractor should be used when the tractor is pulling something. In some situations, the farmer may instead use the tractor axle as the "pulling point." This is an unstable point of attachment for pulling on the tractor and it may cause a rollover. Farmers often find it necessary to drive up or down steep inclines, this also may cause rollovers.

c. Open top vs. cab.
It is easy to see that if a farmer rolls a tractor without

a cab, as the farmer falls into the ditch, the tractor follows him in and lands on him. Tractors made since OSHA began regulating farm equipment, have cabs with a rollover bar built into the frame. When these tractors roll over, the bar gives more support to the cab and provides better protection for the driver.

2. Anticipated Injuries:
    a. Crushing to any and all body areas should be anticipated with associated internal and external bleeding, shock, fractures, respiratory distress (from chest injuries), and head injuries as probable injuries.
    b. Thermal burns from the engine fluids (oil, hydraulic fluids) and chemical burns from battery acid and tire fluids are possible.
3. At the Scene: The Rescue:
    a. Shut the tractor off! (Gas vs. Diesel)
    b. Use blocking and chains to stabilize the tractor so it will not move any more.
    c. Beware of battery acid, fuel, radiator coolant, and hot oil all of which might be leaking on the ground, patient, or YOU.
    d. Large amounts of gasoline or diesel fuel are often spilled. Since extrication can produce sparks, have the firemen stand-by with a charged fire hose and chemical fire extinguishers.
    e. If the patient is trapped underneath, you will need to lift the tractor up enough to get the patient out. Possible tools needed: Hyd. cutters, air bags, jack, wrecker truck and hoist, or another tractor with a front end loader and chains.
        1) When lifting a tractor or any piece of equipment off of a patient, THINK PHYSICS - lifting on one side will cause the other side to sink further into the ground. If another tractor or a tow truck is used to lift the tipped tractor, use a cable (NO NYLON ROPE, it stretches) or chain and fasten it on the AXLE of the tipped tractor on the side to be lifted. Consider draping the chain with a tarp in case the chain would break. Keep non-essential rescuers back from the area to prevent their injury if a chain would break. Watch and block as the tractor is lifted to be sure the tractor doesn't "shift" or roll further endangering the patient. Remember: IF YOU LIFT AN INCH, CRIB AN INCH! The maximum distance to life without shoving in more cribbing is 2 inches. One inch would be even better.
        2) Consider scooping dirt out from under the patient to relieve some of the pressure on him. Be sure to crib if enough dirt has been removed.
        3) Stabilization of the patient is needed before moving him, it may not be possible if the scene is not stable (as discussed previously). If possible, apply a cervical collar, then pull the patient out by his long axis. Use of a long board is preferable to do this removal, but may not be possible. Treat the patient

further at this time only after both the patient and rescuers are in a safe place. Have your MAST suit ready to put on before you lift the tractor. Consider starting IVs if you are an advanced service.

C. Skid-Loader: It is not a Tractor.
  1. The operation of a skid-loader is similar to a tank. To turn right, a brake is applied to the wheels on the right side of the machine while the left wheels are allowed to turn. Vice-versa to turn left.
  2. Due to the compact size of these machines, it doesn't take much of a load in the bucket in front or much of a sloping hill to tip them over (high center of gravity).
  3. From the factory, all skid-loaders come with a cage the operator sits in while operating the machine. Farmers sometimes take these cages off to drive into small doors on buildings and the protection the cages provide is gone.
  4. Accident mechanism:
    a. If the farmer is not buckled in with the seat belt, and bucket is raised, he may fall forward and become caught between the bucket and the ground.
    b. Sometimes the operator will raise the bucket up in the air to work on the front of the skid-loader. If the hydraulics should fail, the bucket will come down trapping him between the front of the loader and the bucket.
    c. If operating the skid-loader on a side hill the loader can roll over pinning the farmer under it if the cage has been taken off.
  5. Rescue:
    a. If your patient is trapped, you will probably need Hyd. spreaders or air bags to release him.
    b. Remember to block the skid-loader wheels.
    c. The injuries caused by skid-loader accidents are the same as associated with tractor accidents. Use the same patient care techniques.

IV. Hydraulics
  A. What is a hydraulic system? - The use of liquid (usually oil) under pressure to do work.
    1. The pressures that most hydraulic cylinders work at is between 1000 and 2500 psi. In some heavy duty industrial settings, it can be much higher. NEVER cut anything that even resembles a hydraulic hose. That hose may be under pressure even if the machine is not running and is turned off. You can't tell by looking at it if there is pressure in the hose. The fluid in the hoses also becomes hot as pressure increases in the system.
  B. Injuries:
    1. Injury is usually caused by penetration of the hydraulic fluid into the body. At 1000 psi, a pin-hole will shoot right through a person's hand. This will cause destruction of body tissues from impact of the fluid.
    2. Hydraulic fluid is usually an oil and is impossible to clean out of human tissue. Even if the tissue damage from the force of the penetration of the fluid is not great, the tissues must be cleaned out to prevent infection and this may require

significant loss of tissue. This may result in permanent disability to the patient.

3. Since the fluid is hot, burn at the site of fluid penetration into the body is probable resulting in more tissue destruction. The hot fluid also may spray out under pressure and burn other areas of the patient.
4. Hydraulic motors and pumps can explode and spray fluid as projectiles.
5. Crushing of a patient because of loss of hydraulic pressure can happen as a patient becomes entrapped under/between pieces of machinery.

C. Rescue from entrapment controlled by hydraulics.

1. Get someone familiar with the system! A mistake could cause further patient injury.
2. Always assume there is pressure in the hydraulic hoses.
3. Hydraulic fluid may be flammable and avoid sparks/flames and have a charged fire hose or ABC fire extinguisher available.
4. Whenever possible, lift the equipment with air bags, Hyd. spreaders, etc. since the spreading mechanism can be more easily handled with these tools and the rescue will be more controlled. Be sure to CRIB and BLOCK.
5. If releasing pressure in the hydraulic system is necessary, secure and shore the equipment before any pressure is released.
6. If controls cannot be used to release the pressure, disconnect the hydraulic hose at the tractor. By covering the end of the hose with a blanket, the hose end may be struck on a hard surface thereby releasing a little pressure on the hose as the oil shoots out. Be SURE to cover the end of the hose for when the oil shoots out it will go all over if not covered. (Remember the oil may be hot.)
7. DO NOT CUT THE HYDRAULIC HOSES - the pressure will cause the hot fluid to spray and burn. Only as a last resort should this be attempted. A bolt cutter or hacksaw will be used to cut the hoses AFTER the patient and rescuers are protected from spraying fluid.

D. Patient management:

1. As with all management, assess and treat the patient's ABC's.
2. If it is a localized wound caused from pressurized fluid entering the patient's body, dress the wound and splint.
3. Consider the extent of the patient's injuries as to appropriate use of oxygen. If the patient's injuries are due to entrapment due to loss of hydraulic pressure, manage the patient as any other tractor/trauma patient.

V. Power Take-offs

A. What is it?

1. A PTO (Power Take-Off) is a steel shaft usually covered by a guard which hooks up to a tractor on one end and another piece of equipment on the other end of the shaft. The shaft normally telescopes over itself and so its length is adjustable. As the name implies, the shaft takes power off of the tractor and gives that power to another machine.
2. Tractors can operate a PTO shaft at one of two separate speeds. Some operate at 540 rev./min. and others are 1000

rpm's (rotation per minute). They may also be operated at slower speeds.
  3. The PTO shaft turns in a clockwise direction as you face the rear of the tractor.

B. Safety guards on the PTO:
  1. The new style guards are made of plastic. Older PTO shafts were guarded with steel guards. Very old shafts do not have guards.
  2. When steel guarded shafts sit out in the rain and snow for a few years, the guard can rust to the shaft. When this happens, it looks like the shaft is guarded but it is not.
  3. It takes only a little nick or rough edge on these shafts to catch a piece of clothing and the farmer gets pulled into and wrapped around the shaft.

C. Mechanism of injury caused by PTOs:
  1. As a victim is "grabbed" by the PTO which is rotating at a slow speed (540 rpm), he is wrapped around the shaft and spun nine times per second.
  2. The patient's injuries are usually massive. Traumatic asphyxia from sudden twisting on the clothes around the patient, fractures, lacerations, amputations, head and other internal injuries are all probable.

D. Rescue of the PTO victim:
  1. Be sure the power is OFF! (I.e., the tractor) and disabled so it cannot start again. On some tractors, it is possible that turning the PTO shaft could re-start the tractor's engine.
  2. It may be that only clothing is holding the patient onto the PTO shaft and you will have to cut away at his clothing to get him off. This is not always as easy to do as it sounds. Use your seat-belt scissors.
  3. If the patient cannot be released by his clothing, disconnect the PTO shaft from either the tractor or equipment. You may need to call someone who knows the equipment. You may need to use a combination cutting clothes and unhooking the PTO shaft to successfully release the patient.
  4. Cutting the PTO shaft may need to be done if you are not successful using the other two methods of patient release. A hacksaw works well for this.

E. Patient management:
  1. Assume the patient has neck and back injuries and stabilize with a cervical collar if his condition will allow.
  2. The other injuries will be so varied and usually involve many body systems, that triage of the injuries is vital with special attention to maintenance of the ABC's.
  3. Depending on your distance from the hospital, it may benefit the patient to call in an air ambulance.

VI. Auger
  A. What is it?
    1. An auger is a piece of equipment consisting of a shaft with a flighting which rotates inside a tube.
    2. The purpose of an auger is to move a material, usually grain, from one place to another.
    3. Augers come in all different sizes of diameters and lengths. They may be powered by an electric motor or run by a gasoline

engine, or a PTO shaft.

4. Most augers have some sort of guard to cover the flighting. Some of the older augers do not have guards or have had the guard removed while being worked on.
5. The speed augers turn is widely variable.

B. Auger Mechanism of Injury:

1. Lack of appropriate guards, slipping or falling into them, and complacency are the major factors relating to auger accidents.
2. The gear assembly and the PTO shaft can also be the cause of injuries.
3. Directly inserting a limb into the auger is not necessary to become entangled in one. A sweep auger (used to "sweep" out an area as its name indicates) often has no guard. A pant leg can be "grabbed" and pull the person into the auger just like a PTO shaft would.
4. Where the auger screw meets the casing, a "shear point" is created. At this point, tearing and twisting of the limb occurs as the limb is pinched between the auger flighting and the tube. The injuries resulting are serious lacerations and amputations.

C. Rescue from entanglement with augers. There are a number of ways to get someone out of an auger, depending on the part of the body that is entangled, how far into the auger the part has gone, and the size of the auger.

1. First, SHUT OFF THE POWER WHICH RUNS THE AUGER!
2. If the limb is amputated and in a short way, take a pipe wrench and grab the shaft of the auger to turn the auger backwards by hand. The EMT must be careful to not get his fingers caught in the auger when doing this (turn the auger slowly). This will allow the EMT to retrieve the body part for possible reattachment to the patient.
3. If the limb is amputated and into the auger farther OR, IF THE PATIENT IS STILL ATTACHED TO THE LIMB, you must take the auger apart.
    a. One way is to cut away the tube which is around the auger with a hacksaw or air chisel. Cut the tube crosswise at a point well above the entangled limb (be sure the patient's limb is not directly beneath the site you are cutting). Then, make another cut lengthwise down the tube beside the limb so using a pry bar or pliers, you can fold the tubing back to expose the limb. If the tube is too thick to bend back, you may need to make another lengthwise cut to create a "lid" which can be lifted off.
    b. The auger shaft itself can also be cut with a hacksaw or Hyd. cutter above and below the patient entry point if needed, to allow the limb to be extricated. Do not cut the shaft (or tubing) at a splice since the shaft will be solid all the way through at that point and for four to eight inches on each side of the connecting point. Anywhere else, the shaft is usually hollow and can be cut with a hacksaw or Hyd. cutter (a carbide blade is a must)!
    c. Consider taking the shortened section of the auger with the patient still in it to the ER. There, the patient can be extricated and bleeding can be managed in a controlled setting.

d. Using a cutting torch to cut the auger loose can also be used, but should be used only as a last resort. The cutting torch produces hot, melted steel with flies and can burn you and the patient. If the auger was empty when the patient became entangled in it, the melted steel will fall down inside the auger tube and roll down onto the entrapped limb.

D. Patient management:
1. ABC's.
2. Give maximum oxygen - the patient is probably in shock (do not give if a cutting torch is in use).
3. While the body part is still in the auger, there may be enough pressure to control any bleeding. If the ERT removes the patient, bleeding may start again. Be ready to apply dressings and pressure. Lacerations from augers are often deep (to the bone) and may be numerous. Assume bones will be broken so have splints ready.
4. If a body part is amputated, do not waste a lot of time at the scene looking for it. The priority is to get the patient to the hospital. Have someone at the scene continue to search for the missing parts and bring them when found.
5. Consider calling a helicopter or asking for a doctor at the scene if the extrication will be prolonged.

VII. Other Machinery - Balers, Corn Pickers, Elevators, Self-Unloading Wagons, Combines, Tillage Equipment.

A. General Description - Most farm machinery is a combination of the previous machinery (auger, PTO's) and belts, chains, and gears with variations. Many of the extrication situations you will become involved with have similar components.

B. Mechanism of Injury and Rescue:
1. Entanglement in the belts, chains, and gears are frequent causes of injury.
   a. The resulting injuries are usually fractures, amputations of fingers, and lacerations.
   b. The rescue:
      1) First - SHUT DOWN THE EQUIPMENT!
      2) Cutting the belts/chains with a bolt cutter or find the "master link" on the chair and separate it.
      3) Dismantle the gears if the patient is trapped in them.
   c. The patient's injuries will usually be localized to extremity entrapped. As with any trauma, treat not only the obvious injury, but do a patient exam and take a history which might turn up other considerations besides the obvious. Usually, splinting and bandaging the extremity is needed and possible treatment for shock is indicated.
2. Entanglement in PTO's (which frequently powers the equipment being used), augers entanglement, and being "pinned" under the equipment also occurs on the farm. These accidents are usually more life-threatening but less frequent than the above situations. Follow the guidelines established earlier in this lecture.

C. Balers - A baler is a piece of equipment used to compress plant material into a manageable size so it may be stored and used at a later date. Hay, straw, and corn stalks are most frequently baled.

1. Conventional balers form small rectangle bales which are held together with wire or twine string.
    a. Mechanism of injury/injuries.
        1) Farmers may attempt to make adjustments to the baler before they turn it off. Entanglement in the PTO shaft, knotting mechanism, and the "pick up" are most common.
        2) The hands and arms are usually the limbs entrapped which result in amputations, crushing, and punctures to the limbs. It is possible for the farmer to be pulled into the baler farther resulting in head and chest injuries, but these are less common.
    b. Rescue and patient management.
        1) Shut the machine off and disassemble the parts needed.
        2) It may be necessary to cut the tines off of the pick-up with bolt cutters of Hyd. cutters.
        3) If a cutting torch is needed - REMOVE THE PLANT MATERIAL FROM INSIDE THE MACHINE AROUND THE BALER FIRST! Have the fire extinguisher ready for use!
        4) Most of the injuries will need splints and dressings as soft tissue injuries and fractures are probable.
2. Round Baler - Instead of pressing plant material into small rectangular bundles which are easily handled by one man, a round baler rolls the plant material into a 100 to 1500 pound cylinder. The round baler is powered by a PTO shaft from a tractor as is the small baler.
    a. Mechanism of injury/injuries - Farmers become entangled in this baler by adjusting it while it is running, much as in the small baler.
        1) Farmers usually get caught in the pick-up and the belts/chains which compress the crop.
        2) Because of its larger size, the entire person can become entangled and compressed. Friction burns from belts can also occur which can cause significant tissue loss.
    b. Rescue and patient management.
        1) Shut the baler OFF!
        2) Block any of the parts which may shift.
        3) Cut the belts and chains and remove plant material.
        4) Loosen the rollers and belts carefully since they are under tension and could spring back, causing further injury to the patients and rescuers.
        5) Take fire precautions (have a fire extinguisher ready) during the extrication.
        6) Treat the patient's injuries as necessary. (ABC's, etc.) Treat the burns from the belts as you would any thermal burn. Protect them from further loss of moisture with a damp dressing covered with a dry dressing.

D. Mowers

The category of mowers includes everything from lawn mowers to ditch mowers used by the country road crew. Different mowers operate on one of two types of cutting actions. The mower can have a blade that spins around and cuts or there may be a sickle that moves back and forth to do the cutting.

1. Mechanism of Injury/Injuries.
    a. A victim frequently becomes injured by a mower when the tractor the mower is attached to rolls on a slope or the victim slips a hand or foot under the operating mower.
    b. The injury which results is usually a serious laceration or amputation. Shock can easily follow.
2. Rescue and patient management.
    a. Disentanglement is usually not needed. Control of bleeding and treatment for shock will be priorities.
    b. Locating amputated parts may be difficult, especially if a rotary mower was involved. Use procedures previously discussed for handling an amputation.

E. Combines

A combine is a machine used to harvest the seeds of plants (corn, soybeans, oats, and wheat). They are usually self-propelled.

1. How does it work?
    a. By attaching different pieces of equipment to the front of a combine (called heads), a farmer can harvest different kinds of plants. A grain table is used to harvest soybeans and wheat. This type of head can be identified by a sickle in the front of the head which goes back and forth at high speed to cut the plant stem. Once the plant is cut, a reel pushes the plant into a large auger which augers the plant to the middle of the machine. It enters the threshing chamber of the combine. Here the seeds are stripped from the stem and are taken to a small holding bin on top of the combine. The stems and leaves are sent out the back end of the machine.
    b. Another attachment that can be used is called a corn head. This head is used to harvest the seeds of a corn plant. It has a number of snouts that stick out in front. The combine is driven so one row of corn goes between two snouts. As the corn enters this area, the stem is grabbed by a pair of snapping rollers which pulls the stalk through the rollers, but leaves the ear. The ear then goes into the machine to separate the seed from the cob. The rest of the process is the same as for soybeans and wheat.
2. General mechanism of injury/patient injuries:
    a. Most injuries caused from entanglement in a combine occur when the farmers are repairing, working on, or are cleaning it out while the combine is still running.
    b. Hands, feet, and clothing (gloves) are "grabbed" as the farmer works on the equipment and he can be pulled into moving parts.
    c. Lacerations, frictions burns, and amputations result.
3. Snapping Rollers - hazards and injuries:
    a. Snapping rollers are on the corn head. They are shafts which run "up" the nose of the combine, side-by-side. They have interlocking fingers which grab the corn stem and pull the corn through. There is a pair of snapping rollers for every row of corn being harvested (a combine

harvesting two rows of corns at a time has four snapping rollers, etc.). People often get a hand or leg caught in these rollers.

b. No matter how quick the farmer's reaction time is, he is not fast enough to prevent entanglement.
   1) Snapping rollers pull material through them at the rate of 18 feet per second.
   2) Human reaction time is normally 0.3 seconds.
   3) Most corn stalks at harvest time are from 5 to 8 feet tall, averaging around 6 feet. When the farmer leaves the machine running and gets out to unplug it, he grabs at some of the plugged stalks and pulls on them. If he succeeds in unplugging the machine, the slip-clutch snaps back together and the snapping rollers start to move.
   4) If the farmer is holding one of the stalks at the time it starts to move, his hand and arm are caught in the rollers.

c. Extrication and patient management:
   1) If a person is caught in the snapping rollers of a combine, the first step of extrication is SHUT THE COMBINE OFF!
   2) For this situation, extrication air bags are the tool of choice. Why air bags and not Hyd. spreaders? The spreader cannot keep a good grip on the rollers. The rollers tend to roll when being spread instead of moving apart. When using air bags, the rollers just spread apart. The friction of the bags inhibit rolling. Be sure to have blocking reading to block the rollers as they are spread.
   3) ABC's are always first. Oxygen may be put on. The pressure of the snapping rollers on the arm or leg may be controlling the bleeding for you. If that's the case, you better have MAST trousers out and laid open on the long board ready to put on. When that pressure is released, profuse bleeding may occur. Anticipate that fractures as well as major lacerations will be present and have splints ready.
   4) Consider calling a helicopter or physician to the site. Appropriate procedure will depend on the anticipated extrication time and time to a hospital. In field amputations have had to be performed to save the life of a patient in past years. Without appropriate extrication tools, these desperate measures are sometimes needed.

4. Sickle Injuries.
There aren't many injuries caused by the combine's sickle. Perhaps it is because the hazard is so much more obvious than is the snapping rollers hazard. It is easy to see if one were to get their fingers into the sickle they could be cut off. Injuries caused by a sickle usually happens if the patient falls onto it.

a. Depending what part of the body hits the sickle, it may cause an amputation or a severe laceration.

- b. If an amputation occurs, handle it as other amputations. If the patient has a laceration, control the bleeding put on O2, splint if necessary and transport.

5. Augers - they are in the combine, but because of their location in the machine, there are few entanglements with them. If a farmer should become entangled, follow the procedures discussed earlier.
6. Chain and belt injuries - The combine is run by a series of belts or chains connecting one shaft to another. Since the inception of OSHA, it has been a requirement to have guards on the machine to cover belts and chains. Not all areas are covered by the guards and some guards are removed by the operator which increases the possibility for entanglement.
   - a. Extrication:
     - 1) If the farmer has his hand or finger caught between chain and a sprocket, the chain must be loosened or removed to get his hand or finger out. Every chain and belt is kept tight by something called a tightener. This tightener can be loosened which may give enough slack to the chain to get a finger out.
     - 2) If more room is needed the chain will have to be split apart. Every chain contains at least one link called a connecting link. This is the segment of chain which can be easily disconnected. Depending where this link is located on the chain, it may not be accessible to you. If that is the case, a bolt cutter may be used to cut it apart.
   - b. Patient management:
     Anticipate the same injuries as with all other chain/belt entanglements and follow the same procedures.

VIII. Grain Bins
- A. Description of grain bins - What are they?
  1. Grain bins are used on the farm and at elevators for the drying and storage of grain.
  2. They come in many sizes. The size can vary from 1000 bushels to millions of bushels per bin. Most farm bins range from 1000 to 50,000 bushels. Bins at large elevators can be as large as 200,000 to 500,000 bushels. Some of the cement silos at large elevators can hold millions of bushels.
- B. Moving Grain - Deceptively Hazardous.
  1. Dry grain flows down at a 60 degree angle. The more wet the grain, the more steep the angle of grain flow becomes until it gets to 90 degrees and no longer will flow.
  2. When emptying a bin, a hole is usually opened up somewhere in or along the floor of the bin. A column of grain the same size as that hole will start to flow down from the top of the grain. The grain on top keeps filling in the void until the 60 degree angle is formed. So it is always the grain on top that is removed before the grain underneath can move.
  3. If a person would step into that moving column of grain, it would take less than 3 seconds for the person to be pulled down to where the grain would cover his knees. At that point, the person can no longer pull himself out of the flowing grain.

4. The person is then pulled with the grain to the bottom of the bin where suffocation rapidly occurs. The pressure of the grain on the person's chest will impair the victim's respirations even before the victim's head and face are covered.
5. The same mechanism as stated above occurs also in gravity wagons which are used to move grain. The danger from these wagons comes when children climb inside the wagon while it is being unloaded. They become entrapped in the moving grain and may suffocate.

C. Crusted Grain:
  1. The surface of grain in a bin may spoil and crust. This may not be apparent to the person in the bin!
  2. When grain is augured out of the bin, a void forms under the crust.
  3. The crust can break when the farmer walks on it and he falls into the void.

D. Rescue Precautions:
  1. SHUT THE POWER TO THE BIN AUGER OFF!
  2. Assume the victim is alive - even if he has been submerged for a long time. It is believed that the mammalian diving reflex may be activated in grain submersion. Even in the summer, the temperature of the grain in the middle of the bin is usually not much over 60 degrees F. Lacking other data, we must operate on the assumption that the victim is in this "suspended" state.
  3. Do not use the auger to empty the bin. Remember that it is the grain on top which is pulled down to be augured out first. If the victim is in the grain, he will be pulled down further with the grain.
  4. Use an adequate number of rescuers and ropes to perform the rescue. For safety of the rescuers, at least three rescuers are needed in a bin to retrieve the victim.
     a. If grain is not crusted, two of the rescuers are secured with ropes (use of a body harness is recommended) to the bin and one rescuer is outside on top of the bin to monitor the two inside and get assistance as needed.
     b. If the grain is crusted over, use a long stick or pole to knock the crust down before you enter.
  5. Dust masks for the rescuers are needed to reduce the amount of dust and mold spores aspirated. In some persons, this dust and mold can cause serious allergic reactions. If the rescuer becomes dizzy or short of breath - HE MUST BE REMOVED! Give the rescuer oxygen and monitor him for allergic symptoms/ worsening SOB. Transport of the rescuer may be necessary.

E. Rescue of the Partially Submerged Victim:
  1. If the person is stuck somewhere from the hips down, it may be possible to "just pull him out."
     a. If a 150 lb. man is stuck in grain up to his armpits, it takes 800 lb. of pull straight up to get him out. That is the amount of force the grain is exerting on the body. It's impossible for two AVERAGE ERT's to lift that much weight. If they could lift the victim, the force may pull the victim's arms out of their sockets or cause internal injuries.

2. Entry of Rescuers in the Bin:
   The method of entry into a grain bin where a victim is partially submerged in the grain will be determined by how deep into the grain the victim is and how much grain is in the bin.
   a. If the victim is in the grain below waist level, the rescuers may enter the bin through the crawling door on the top outside edge of the bin.
   b. If the victim is submerged in the grain so only his head and/or arms are showing, the rescuer needs to enter the bin through the hole on top in the middle and lower himself with a rope. Why? If only the victim's head is showing and the ERT enters through the door on the top outside edge, as the ERT steps in the grain and walks down to the patient, a wave of grain is created which may cover the patient up entirely.
3. Removing the Victim from the Bin:
   a. If the victim is covered with grain only up to his waist or lower, three or four long-boards may be taken into the bin.
      1) Set these boards up on their long edge about 2 to 3 feet away from the patient and push them down into the grain about half way up on the board. This creates a "dam."
      2) Then take a shovel and scoop the grain, which is near the patient, away from him. Dump the grain behind the boards. The boards will keep more grain from flowing in around the patient.
      3) Assist the patient into a stokes basket. The patient may insist that he is "alright," but he may underestimate the amount of stress he has been under and not be able to climb down the ladder safely. The pressure of the grain on the victim's legs may have inhibited circulation.
   b. If the victim is submerged in grain up to his armpits or higher:
      1) An accurate assessment of his ABC's becomes more difficult. With the grain surrounding his chest the victim's lungs cannot expand to bring in adequate air. The patient may need oxygen to prevent further hypoxia. (If oxygen is to be administered, be sure there are no sparks, etc. from extrication devices. Dust in the air may also set-up the environment for further combustion. Oxygen should only be administered in the bin if there are NO other hazards present which could support fire or explosion!)
      2) Three or four long boards may be used here also to hold back the grain. However in this case the ERTs shovel out enough grain to get the KED board on the patient (leg straps not included). At this point a rope needs to be tied somewhere overhead. Take the loose end through the hand-holds on the back of the KED and circle around the front of the KED. Tie the rope off in the back.
      4) With the victim now secured in the KED, the rescuers

may be able to raise the victim up out of the grain, or secure the victim so he will not move as the grain is removed from around him.

5) Remove the victim from the bin using a stokes basket from either the top of the bin or out a hole in the side of the bin. The stokes will provide the most protection for the victim.

F. Rescue of the Totally Submerged Victim:

1. The two ERTs in the bin should be harnessed and roped for safety as they search inside the bin for the victim. They need to have communication with the rescuers outside of the bin to notify the outside personnel of assistance they may need, when and where the victim is located, etc.
2. Do not let anyone try to empty the bin by auguring it out (for reasons discussed previously)!
3. Cut holes in the sides of the bin to "drain" the grain out of the bin and away from the victim.
   a. When making the holes, use a cutting torch, an air chisel, or a fireman's K saw.
   b. Some farmers have used the edge of a front-end loader on their tractor to gouge out a hole by ramming the bin with it. One word of caution, this may create a tear in the bin that can't be controlled. Meaning, the hole keeps enlarging and the bin breaks apart. Should this happen, the ERT will have a number of victims, including himself, from being covered with the gush of grain that comes out of the hole.
   c. When these holes are cut they should be made about four feet off of the ground in the shape of a triangle with its point facing straight up. Then only cut two sides each about 18 inches long. Leave the bottom line of the triangle intact. This will allow a bar or something to be stuck on the outside of the flap and on the inside of the bin to shut the hole when needed.
   d. Cut at least two (preferably four or more) holes in the bin. Always, the holes are cut directly across from each other. When a hole is cut on one side of a bin a hole needs to be cut on the exact opposite side of the bin. This is done to keep the pressure on the bin's outside wall relatively equal. If all the grain were allowed to be taken out of just one hole, the possibility exists that the bin would tip over. The size of the bin will dictate how many holes will need to be cut. Just be sure the holes are cut in pairs and on opposite sides.
   e. Once the grain has started to flow out the holes, just take out enough to get the victim out.
   f. You will need assistance to keep the grain running out of the holes from building up on the outside of the bin. If it builds up outside the hole, it will block the escape of more grain still inside the bin. Now is when the ERT understands just how many people this job takes. For every hole in the bin there needs to be a tractor and bucket, or a skid-loader, or a grain-vac, or an auger to keep the grain away from the hole so grain will keep flowing. It would also be nice to have trucks or wagons

        to put the grain in instead of making more piles somewhere else. Finding and getting access to this equipment is the job of the Rescuers on the ground. (The neighbors of the farmer will be one of your better resources - can the police contact them?)
    g. Once the grain is down to where it won't flow out the holes any longer you will need 6 to 8 people inside the bin with scoop shovels shoveling the grain out the holes.
4. Victim Resuscitation:
    a. Once the victim is located do your ABC's. CPR will probably be indicated. Remember the mammalian diving reflex.
    b. During the rescue, it may be helpful to have a doctor brought to the scene. This may save doing CPR all the way to the hospital.
    c. So why go to all this work and demolish a bin? There is always a chance the victim is salvageable and the victim's family/neighbors are possibly present. At this point, they are also patients and need the psychological support of knowing that all efforts were made at saving the victim.

IX. Silos

Silos are large upright cylinders (or horizontal pits) which are used to store plant material for feeding to livestock at a later time.

A. Types (we will not consider horizontal pit types).
    1. The cement stave silo is made of slabs of cement which are stacked one on top of the other. They are held together by large steel rings which go around the outside circumference.
        a. These silos are loaded by a machine which blows the plant material up a chute attached to the side of the silo. The material then falls to the bottom on the inside.
        b. Most often a silo will be equipped with an automatic silage unloader. This is a machine that is inside the silo and rests on the silage. It is attached to the top of the silo with a cable. It consists of an auger and a blower which are run by electric motors. This unloader runs over the top of the silage, scrapes a layer off the top, and blows it through one of the silo doors and down a chute. From there the silage can either be run through an elevator to get to a feed bunk or it can be loaded with a tractor and taken to the bunk.
    2. A Harvestore silo is one of the big blue silos standing around the countryside. These are different from the cement stave silos in that they are sealed 100% air tight. No air gets into them and no air gets out once the silo is filled.
        a. The silos can be filled the same way as the cement stave silos.
        b. During silo filling time, there is air in the silo. When the silo is full or the farmer is done filling it, the door on the top is shut and the silo is effectively sealed.

B. Dangers of silos and rescue.
    1. The bacteria and plant material continue to respire when they

are put into the silo and this uses up all of the oxygen in the silo. At this point, anaerobic bacteria begin to grow and lactic acid is produced. This acid development "pickles" the plant material by reducing the pH to 4.5 or less. This preserves the plant material.

This whole process takes about 10 to 14 days. During this time, toxic gases (CO_2, NO_2, methane) are produced in the silo by the bacteria. IT IS NOT SAFE TO ENTER THE SILO DURING THIS TIME PERIOD! Some of the gases are heavier than air so they will settle to the lowest point--watch out for silo rooms (attached to the base of silos) if they have been closed since filling the silo.

a. These gases are dangerous--at first the victim may not think he has had much exposure. There may be few symptoms at first but pulmonary edema will develop insidiously a few hours later.

b. Get all persons exposed to silo gas to a doctor to be monitored and treated if symptoms develop.

c. Rescue:

   1) If you get a call to a farm and are told that a victim is in a silo, determine what type of silo it is and has it been filled recently.

   2) If the silo is a cement stave silo and has been filled recently, DO NOT GO IN! From 2 to 14 days after a silo has been filled, the toxic gases continue to be produced. Nitrous oxide is the major threat. (After the silo is filled, the silo room will contain dead sparrows, dead raccoons, and dead mice. Get the point?) A self-contained-breathing apparatus must be used to enter the silo or the silo room during this time.

   3) Assess the accident scenario. If the silo is not blue and it has been more than 14 days since the silo was filled, it is probably safe to enter if the victim is caught in the silo unloader and calling for help. (Silo filling is in the early fall for most of our silage crops.) In this case, to wait for the SCBA (self-contained-breathing-apparatus) would be unnecessary and would jeopardize the life of the patient.

   4) If you need assistance (or more equipment), call for it early in the rescue.

   5) If you have a rope, carry it along with you when you climb up the silo. Failure to remember this point will waste precious time and drain you of energy climbing down and back up to get it.

   6) When you access the patient in the silo, do not try to put on oxygen as it will be too dangerous raising and lowering the tank up and down the silo. Also do not try to give the patient air from your SCBA. Your major concern is to get the victim out of the environment. Be sure the bleeding of the patient is controlled, as the victim may have to be lowered vertically to get him down the chute.

   7) Some type of harness or a very good job of knot tying

will have to be done to insure the safety of your victim. Do not try just putting the rope under the victim's armpits. If he should pass out and go limp, the rope could slip over his arms. It is a good idea to have a couple of firemen up in the silo with you. They can help you control the decent of your patient down the chute.

2. Silo Unloader - inside of the silo which augers the silage out.
    - a. This is used in the later fall and winter and spring when the danger of silo gas is very small (unless it is a sealed silo).
    - b. Before entering the silo, disable or lock out the power to the unloader.
    - c. Victims can become entangled in the unloader when they climb inside the silo to "assist" it. (In the winter when it is very cold, the silage freezes and the unloader may have a difficult time auguring the silage out. The farmer may try to break silage loose, etc. while the auger is running.) The extrication from this auger is the same as for other augers.
    - d. Stabilize the victim and remove the victim from the silo using the techniques of heights and depths rescue.
3. Safety Review for Silo Rescue.
    - a. Use SCBA (self-contained-breathing-apparatus) if the silo has been filled within the last 3 weeks.
    - b. Use SCBA in a sealed silo at ALL times.
    - c. Use a lifeline with the SCBA.
    - d. If a victim is lying on a surface which is giving off gas (fresh silage), raise him if possible (gas sinks).
    - e. Put SCBA on the victim if possible (but not your own).
    - f. Silo ladders are hazardous (they can get slippery and are not very deep), use a life belt and hook when climbing.
    - g. Get medical attention immediately for anyone exposed to silo gas.

X. Confinement Buildings

A. The dangers of confinement buildings lies in the build-up of toxic bases which are produced by the decomposition of manure which accumulates in pits under the floor of the building. These toxic gases may be present at any time in the confinement building; however, the highest danger is when either the pit is being cleaned out or the electricity has been off for a period of time. Since the gases are heavier than air, they may cause no problem until the manure is agitated (which occurs during cleaning) and the gases are propelled by this agitation up into the main part of the building. If the electricity has been off for a time, the gases which are normally blown out of the pit area may also accumulate enough to enter into the main portion of the building and cause problems to the livestock and humans in that environment. The gases produced are:

1. Hydrogen Sulfide.

This is the real killer. It is invisible to the eye but it can be smelled when first entering a building. It has a rotten egg smell to it. When a farmer breathes this gas what happens is that the gas is deadening the olfactory nerves in his nose so he doesn't smell the gas anymore. The gas is still there, he just doesn't smell it. A minute or two after exposure, the victim passes out and if no one is there to get him out, he dies from respiratory paralysis.

2. Methane.
   This gas is known for its explosive potential. This gas is usually not at high enough levels to be a health hazard.
3. Carbon Dioxide.
   The danger of this gas comes into play when the electricity has been off for a while. Most confinement buildings are ventilated through the use of fans. With the electricity off, the fans stop running but the animals continue breathing. As they breathe, the animals give off CO_2 and the level starts to build and build until the animals die from lack of oxygen.
4. Ammonia.
   Ammonia is a by-product of animal waste. Continued presence in an ammonia rich environment for a prolonged period of time may cause some lung or breathing problems. The level of this gas is usually quite low and for the short duration an ERT would be exposed to ammonia in the confinement rescue, the ammonia is usually not of much significance.

B. Rescue from Confinement Buildings
1. Recognize confinement buildings.
   a. These buildings will vary some in appearance from summer to winter. In the summer they may have doors that open up to allow the natural flow of air. Some buildings use fans for air movement summer and winter. A curtain that goes up and down according to inside temperature may also be used to control air movement.
   b. Another way to recognize confinement buildings is by its pit clean-out port. A pit is a large holding area for manure. Often these pits are inside the building under the animals. Some pits are also built outside a building to keep the inside air a little fresher. A clean-out port is a tube or opening into the pit through which a hose can be inserted to suck out the manure.
2. Recognize the Dangers.
   a. Recent agitation of the manure in the pit.
      Most of these gases can build to dangerous levels when the manure in a pit is agitated. When manure is allowed to set in these pits for a period as it is, the heavier solids in the manure settle to the bottom creating a build-up of solids on the bottom. A piece of equipment called a "honey wagon" is used to clean out these pits. This wagon has a pump that can build up vacuum to suck out the manure and it can build-up pressure in the tank and blow the manure back out to empty the wagon. Sometimes the farmer will suck out a load and then blow it back in to try and stir up those solids on the bottom. This is called agitation. Some farmers even have a machine they stick in the pit and this machine continually agitates the manure while they load. These have been done in buildings when an agitator is running. It takes only a half hour for gas levels to build up to toxic levels. As soon as

agitation is stopped, gas levels return to normal within 1/2 to one hour.

- b. Be cautious! Recognize if the animals still inside are inactive. If the pigs are up walking around or eating, it is probably safe to go inside. Pigs are much more susceptible to changes in oxygen, carbon dioxide, and hydrogen sulfide than are humans. A pig will die at lower levels of toxic gases than a human. So - if the pigs are not moving, they may have succumbed to gases, do not go in and make yourself another victim.

3. Rescue from confinement buildings.
   - a. NEVER go in a confinement building without using a self-contained-breathing-apparatus (SCBA). Especially if it is known that the farmer was in the process of cleaning out the pit.
   - b. Remove the victim from the building--you must before further treatment can be done.
   - c. After the victim is out of the building, do ABC's. Put on oxygen and start CPR if indicated. Attempt resuscitation only in a well ventilated area.

XI. Anhydrous Ammonia.

A. What is it? Anhydrous Ammonia is a material used by farmers that is injected into the ground to be used as a source of nitrogen by plants.

1. The word anhydrous means "without water".
   - a. This material has a tremendous affinity for water.
   - b. If anhydrous ammonia is breathed into the lungs, the victim ends up with acute pulmonary edema.
2. NH_3 (which is the chemical configuration for anhydrous ammonia) is stored in big steel tanks under pressure to keep it in its liquid form. The temperature of this material when it comes out of a tank is -28 degrees F. This cold will cause tissue damage the same as other exposure to extreme cold.
3. NH_3 is a strong alkali which causes chemical burns.

B. Application of NH_3 by farmers.

Farmers pick up pressurized tanks of NH_3 at their fertilizer dealer's plant. The farmers are given a pair of gloves, goggles, a small pocket size bottle of water, and a few other spare parts along with the tank. The farmer may also pick up an applicator if he doesn't own one himself. This is the piece of equipment the farmer pulls behind his tractor to inject the NH_3 into the ground. The tank is pulled behind the applicator.

1. OSHA requires that each tank of anhydrous ammonia which leaves the fertilizer plant to carry a 5 gallon supply of water in case of an accident. There is a plastic tube the farmer can pull out of the top of the water tank to run water on himself if he gets any anhydrous on himself.
2. The inside diameter of this tube is a little bigger than the thickness of a pencil. A pencil-sized stream of water can empty a 5 gallon container in about 7 1/2 minutes. The required time to wash a spill of NH_3 on human tissue is 15 to 20 minutes.
3. When the farmer has arrived at his field and has everything hooked up, he opens a valve from his tractor that allows the

NH3 to flow from the tank through a metering device and down each knife. The knives inject the ammonia into the ground. The connection between the meter device and each knife is a piece of plastic hose. As you can imagine, with NH3 coming out of the tank at -28°F, frost begins to form on the plastic lines running to the knives. Cold plastic has a tendency to break if it is hit or bumped. Due to the vibration of the applicator being pulled through the soil, the plastic lines do develop breaks once in a while.

4. The valves on the top of the tank can also leak or break which allows ammonia to shoot out of the hole. If one of these tanks should ever overturn, leaking valves are a real possibility.

C. Rescue and Management of the Victim of Anhydrous Ammonia Contamination.

1. As you approach the scene of a possible anhydrous ammonia leak, note which way the wind is blowing. The ambulance/ rescue needs to be parked on the upwind side of the accident. This is for the safety of your crew, and your vehicle. When you drive into a cloud of anhydrous, you MIGHT be able to escape with watery eyes and a cough, but the motor on your rig will kill due to lack of oxygen. You would be stuck!!!
2. If liquid anhydrous is leaking out of a tank or hose, it will appear as a cloud of fog. This is not water vapor...do not be fooled by it! If anhydrous vapor is escaping from a leak, it will be harder to see because it is clear. It will look like heat rising off of a blacktop road on a hot summer day. Firemen may need to "fog" the anhydrous down to get the victim out.
3. If a tank is leaking, you may need SCBA until the leak can be stopped. The firemen in rural areas should be trained to handle anhydrous ammonia "spills" and should be able to determine the best way to handle the accessing of a victim.
4. Once you have accessed the victim:
   a. Put your rubber gloves on before you touch the victim. Depending on how drenched the victim's clothes are, you do not want to get anhydrous on you.
   b. Have someone start dousing the victim with water before another EMT takes off the victim's clothes. Clothing can freeze onto the victim's skin, so loosen it first by flushing with water to thaw it.
   c. Flush the victim with copious amounts of water for 15 to 20 minutes to dilute down the chemical irritation.
   d. Assume that the victim will have respiratory problems and put oxygen on the victim as soon as possible. Monitor your patient closely as you may have to assist his breathing if he stops.
   e. Cover burns with a dressing as defined by your local protocol for chemical burns.
   f. If the victim gets NH3 in his eyes, once again run water in his eyes for 15 to 20 minutes.

   g. If a victim has inhaled (which is very probable), the throat has also been burned. A citrus drink may help neutralize this burn if the victim can swallow. Do not waste time to do this, but consider it if the victim is stable enough.

XII. Other Agriculturally Related Chemicals

A. Many chemicals are used in our agricultural practices which can be a hazard to the farmer, his family, and the ERT who may come in contact with them. There are general rules which can help us make sound judgments when confronting them in the field.

1. Signal words - Signal words are words which help us identify the "amount" of danger the chemical poses by telling us the "relative" toxicity of the substance. Agricultural chemicals are categorized by a term called their LD50. This means how much of this chemical does it take to kill (lethal dose) 50% of a given population. This can be based on an oral dose, dermal dose, or inhalation dose.
   a. Caution is the first signal word. A chemical classified under this word is considered relatively nontoxic to slightly toxic. It has an oral LD50 of from 500 mg/kg on up. A chemical bearing this signal word is the least harmful of all the categories.
   b. Warning is the second signal word. These chemicals are considered moderately toxic.
   c. Danger/Poison (skull and crossbones) is the last signal word. This chemical would be considered highly toxic. Only a very minute amount of this could kill a person.
2. Danger by various routes of entry into the body and burns. All routes can be hazardous.
   a. Eyes--this usually occurs from the chemical splashing off of something and landing in the eye.
   b. Mouth--a chemical may also enter the mouth by splashing, but the mouth is usually associated with accidental poisoning in children.
   c. Respiratory tract--this occurs when the chemical is in the form of a powder or dust and is breathed in.
   d. Skin--this is the most common form of chemicals entering the body. Absorption rates compared to the forearm (giving the forearm a value of one):
      1) Forehead will absorb a chemical 4.2 times faster than the forearm
      2) Abdomen - 2.1
      3) Ball of foot - 1.6
      4) Palm of hand - 1.3
      5) Groin (scrotum) - 11.8. This is more dangerous than injecting the chemical. More dangerous than swallowing the chemical. This type of accident can happen frequently.
3. Danger to continued exposure to chemicals - rate of chemicals in the body.
   a. Metabolism - some chemicals can be broken down by the body's own metabolism. This is the general process of breaking down or building up compounds in the body.

   b. Excretion - the body can rid itself of some chemicals through the urine, feces, exhaled air, or sweat. This can take from a few hours to a few months depending on the chemical.

   c. Accumulation - Some chemicals are deposited in fat tissue and there they will become more concentrated.

4. Symptoms of poisoning.
   a. Mild - These include blurred vision, headache, fatigue, nose and throat irritation, skin or eye irritation, nausea and vomiting and stomach cramps.
   b. Moderate - These include being unable to walk, weakness, muscle twitches, pupil constriction, and all earlier symptoms more severe.
   c. Severe - Unconsciousness, breathing difficulty, loss of reflexes, severe secretions from the respiratory tract, convulsions, and death.

B. Rescue and patient management.
   1. Patient management always begins with the scene. You must always be alert to the possibility of chemicals at the scene of a farm accident.
      a. They may be in planters, in bins, in boxes in buildings, at water hydrants where chemicals are mixed in bulk tanks, etc. Farm fires are especially hazardous due to the possibility of toxic fumes. Be alert to the possibility of chemicals to protect yourself from contamination.
      b. Consider the use of rubber gloves, protective clothing, and SCBA at any scene where chemicals are present.
   2. Patient care
      a. Remove the patient from the side if chemical contamination is ongoing.
      b. ABC's, as always, are of prime importance.
      c. Identify the chemical. Find the container (bag) if possible. Just as with any poisoning, that container should be taken to the hospital with the patient.
      d. Consider calling Poison Control or Chem Trec, depending on the emergency situation.
      e. Eyes - Treat as with any chemical. Wash with clean water immediately for at least 15 minutes. Transport to the hospital even if the patient is feeling better. The eyes may have been burned and antibiotics are required.
      f. Mouth - Rinse the mouth out with lots of water. If the patient is unconscious, roll the patient onto his side or stomach and flush the mouth out with water. Be sure to take this patient to the hospital NOW!! Some of the chemical may have been swallowed. Read the label to see if vomiting is indicated. Although the ERT cannot give IPECAC, the ER should be advised of the label recommendations.
      g. Inhaled - Get to fresh air and give O_2. Also take this patient to the hospital.
      h. Skin - Remove the victim's clothes and flush with water. Continue dousing with water while clothing and jewelry are removed. Soap may be needed with the water to remove some oil based chemicals.

      i. Dos and Do nots with chemicals.
         1) Do not use a base to counteract an acid.

2) Do not get the chemical on you.
3) Do take GOOD patient histories.
4) Do take the container or label along to the hospital

Materials developed by Dennis Dieterich, EMT-I, R.R. 2, St. Ansgar, IA.

Lesson 32
Situational Review

Introduction

This lesson provides the students an opportunity to apply selected knowledge and skills learned in the course by group discussion of situational examples. Suggested situations and questions to be posed are given below. The questions do not necessarily have clear-cut answers; rather they are designed to stimulate class discussion. The student should review each situation and be prepared to provide answers to the questions posed.

Objectives

At the conclusion of Lesson #31, the instructor will have provided sufficient information, demonstration, and practice to the student, to ensure his/her ability to:

—Provide in narrative an acceptable description of the functions of an EMT-A in situational examples.

Overview Of Lesson Contents

Situation #1

An ambulance is the first emergency vehicle to arrive at the scene of a two-car collision. Both cars are upright. A quick survey of life-threatening problems has revealed the following patients:

CAR 1: The driver is unconscious and seated in the front seat fastened in his seat belt. The head of the passenger in the front seat has been thrown through the windshield. He is bleeding profusely about the face, is unconscious and his respirations are shallow.

CAR 2. The driver is seated in the front seat. He is sweating and appears to be short of breath. He complains of pain in his chest and left arm. The passenger has been thrown from the car. He is lying on the road moaning that he cannot move his legs. He appears to feel no sensation in his legs.

Questions:

a. What might be wrong with each patient?
b. Which two patients (there are two EMT's) should be treated first and why?
c. What care should be given to each patient?
d. Which two patients should be transported first and why?
e. Would it be necessary to alert the hospital and why?
f. Would the trip to the hospital be made with utmost speed and why?

Situation #2

An unconscious person is found on a city street. His skin is pale and moist and his pulse is rapid. He is having convulsions.

Questions:

a. What might be wrong with the patient?
b. What should be searched for?
c. What care should be given to the patient?

Situation #3

There has been a brawl at the local tavern. One patient is lying on the floor with a knife in his chest. He is bleeding profusely and coughing up frothy blood. Patient No. 2 is unconscious, his respirations shallow, his pulse weak, and blood is dripping from his ears and nose. Patient No. 3 has an angulated compound fracture of the tibia and is bleeding profusely at the fracture site.

Questions:

a. What is most likely wrong with patient No. 1?
b. What is most likely wrong with patient No. 2?
c. Which two patients should be cared for first and why?
d. Should help be enlisted in caring for the patients?
e. What care should be provided for each patient?

f. Which two patients should be transported first and why?

g. Would it be necessary to alert the hospital and why?

h. Should the trip to the hospital be made with utmost speed and why?

Situation #4

A man has barricaded himself in the bathroom. There have been sounds of water running. When you arrive at the man's apartment, the police have just succeeded in opening the bathroom door. They tell you they have heard no sounds for five minutes. You find the patient face down in the bathtub. He is not breathing, has no pulse and his pupils are dilated and fixed.

Questions:

a. What care should be provided for the patient?

b. You have performed cardiopulmonary resuscitation on the patient for 10 minutes without reviving him. Should you cease your efforts and why?

c. What information should you obtain and to whom should you give it?

Situation #5

You are returning from the hospital and a violent thunderstorm erupts. You come across a car on which some electric wires have fallen. The driver is opening the front door of the car.

Question:

a. What should be done and why?

Situation #6

You have taped up a sucking chest wound and are transporting the patient to the hospital. You notice that the patient's respirations are worsening.

Questions:

a. What would you suspect is wrong with the patient?

b. What would you do?

Situation #7

You arrive at a private home and find a woman ranting that her husband plans to kill her and she is going to throw acid at him. You try to calm her from a distance and to keep her husband at a distance. However, he approaches her and she throws the acid in his face.

Questions:

a. What would you suspect is wrong with the wife?

b. How would you care for the husband and wife?

c. What would you do about transporting the two patients?

d. What information should you be sure to obtain and to whom should you give it?

Situation #8

You have been called to a building where there is no known elevator. There is a patient on the third floor having a severe asthmatic attack.

Questions:

a. When you leave the ambulance, what equipment should you take with you and why?

b. When you see the patient, you administer oxygen and his respirations worsen. What would you suspect is wrong and why?

c. How would you carry this person?

d. How would you care for him enroute?

Situation #9

You have been called to take a pregnant woman to the hospital to have a baby.

Questions:

a. When you leave the ambulance, what equipment should you take with you and why?

b. What questions would you ask to determine whether delivery is imminent?

c. You find the woman crowning when you arrive. What should you do to assist her in the delivery?

d. How should you care for the baby?

Situation #10

An unconscious patient has severe third-degree burns of the head, face and neck. His respirations are irregular and his pulse is weak.

Questions:

a. How would you care for the patient?

b. What percentage of the patient is burned?

Situation #11

You are following a car that veers suddenly onto the shoulder of a limited access highway, up an embankment, turns over onto its roof. You can see two people inside dangling in their seat belts and shoulder harnesses.

Questions:

a. What should be done first and why?

b. You have assured that the vehicle is shored up and stable. You find the door on the driver's side unlocked, and you open it to gain access to the victims. What should you do next and why?

c. You find each occupant unconscious. Each is breathing and has no obvious open wounds. How would you remove them from their belts and harnesses?

d. From the information presented, what might have happened to the driver? How would you check?

Situation #12

The windshield of a vehicle is smashed and the driver has a large piece of glass penetrating his left cheek and is bleeding profusely from the left cheek and forehead. He is unconscious and fastened in his seat belt.

Questions:

a. How would you care for the patient?

b. What other injuries might you suspect the patient to have and how would you check for them?

Situation #13

A car has been traveling slowly when it suddenly veers off the road, grazes a tree and comes to rest against another tree. The driver is barely conscious. He does not speak and appears to have no feeling on one side of his body.

Questions:

a. What is most likely wrong with the driver?

b. How would you care for him?

Situation #14

The drive is unconscious. He is fastened in his seat belt. There is dark red blood oozing from his mouth. The passenger in the front seat has an open fracture on the left tibia and is bleeding profusely at the fracture site.

Questions:

a. What is most likely wrong with driver?

b. Which patient would you care for first and why?

c. How would you care for each patient?

d. While you are working on these patients, you hear a moan and discover a child on the floor of the back seat. You have to remove one patient from the vehicle to gain access to the child. Which patient would you move? How would you move him?

e. The child is barely conscious and has a closed angulated fracture of the shaft of the humerus. How would you care for him?

Situation #15

Smoke is coming from a structural fire. On entering the doorway, you notice a placard displaying a radiation symbol and see a man lying on the floor 20 feet away.

Questions:

a. What environmental hazards are likely?
b. What safety precautions should be taken?
c. What modifications should be made in usual patient care and transportation?

Lesson 33
Final Written Test

Introduction

This lesson provides for final evaluation of student knowledge. Each student completes a written examination designed to evaluate attainment of knowledge objectives specified for the course.

Objectives

At the conclusion of Lesson #32, the instructor will provide and administer a written examination which allows the student to:

—Successfully complete a written examination reflecting the knowledge taught in the entire Basic Emergency Medical Technician: National Standard Curriculum.

Note: It is assumed that Lesson 32 and 33 are end of course examinations designed to determine successful course completion and eligibility for formal examination by a State or national agency for licensure or certification. Policies vary. Check with the State EMS office.

Study Suggestions

1. Review all material covered during the course.

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Lesson 34
Final Practical Evaluation of Skills

Introduction

This lesson provides for final evaluation of student skills. Each student performs each skill (or a representative sampling of skills) for an instructor and is evaluated on his performance.

Objectives

At the conclusion of Lesson #33, the instructor will provide and administer a practical examination which allows the student to:

—Successfully demonstrate through practical application on appropriate programmed patients or manikins, any of the skills taught in the entire Basic Emergency Medical Technician: National Standard Curriculum.

Note: It is assumed that Lesson 32 and 33 are end of course examinations designed to determine successful course completion and eligibility for formal examination by a State or national agency for licensure or certification.

Study Suggestions

1. Review all skills and practical applications of treatment covered during the course.

APPENDIX A

SKILLS CHECKLISTS

EMT-A Course

Skills Checklist

Date Approved	Skills	Lesson
________	Patient Assessment	Lesson 2
________	Secondary Survey	Lesson 2
________	Assessing Pulses	Lesson 2
________	Vital Signs	Lesson 2
________	Communication of Patient Information	Lesson 2
________	Positioning Unconscious Patient to Open and Maintain and Airway	Lesson 3
________	Adult FBOA Management: Conscious	Lesson 3
________	Adult FBOA Management: Unconscious	Lesson 3
________	Child FBAO Management: Consicous	Lesson 3
________	Child FBAO Management: Unconscious	Lesson 3
________	Infant FBAO Management: Conscious	Lesson 3
________	Infant FBAO Management: Unconscious	Lesson 3
________	Airway Insertion	Lesson 6
________	Oxygen Delivery System (Portable)	Lesson 6
________	Positive Pressure Demand Valve Resuscitation	Lesson 6
________	Bag-Mask Resuscitation	Lesson 6
________	Suctioning	Lesson 6
________	One Rescuer CPR	Lesson 6
________	Two Rescuer CPR	Lesson 6
________	Child Two Rescuer CPR	Lesson 6
________	Child One Rescuer CPR	Lesson 6
________	Infant CPR	Lesson 6
________	Controlling Hemorrhage	Lesson 7

Date Approved	Skills	Lesson
	MAST/PASG	Lesson 9
	Dressing and Bandaging	Lesson 10
	Avulsions	Lesson 10
	Impaled Objects	Lesson 10
	Hare Traction Splint Application	Lesson 12
	Sager Traction Splint	Lesson 12
	Eye Avulsion	Lesson 14
	Laceration of Forehead/Scalp/Head	Lesson 14
	Laceration of Neck/Shoulder/Hip	Lesson 16
	Thoracic Injuries - Open	Lesson 16
	Flail Chest	Lesson 16
	Abdominal Evisceration	Lesson 16
	Normal Emergency Delivery	Lesson 21
	Improved Log Roll	Lesson 25
	Transferring Patient from Bed to Stretcher	Lesson 25
	Half-Backboard Immobilization	Lesson 26
	Rapid Extrication	Lesson 26
	Spinal Stabilization and Helmet Removal	Lesson 26
	Long Backboard Application	Lesson 26
	"Improved Log Roll" to Backboard	Lesson 26
	Helmet Removal	Lesson 26

EMT-A Course

Lesson 2
Skills Checklist

PATIENT ASSESSMENT

Findings at the scene (upon arrival but prior to patient contact): Selected Universal Precautions in place. Spinal precautions undertaken if there is a possibility of a spine injury.

TIME

___:___ **Scene Overview**

____ Safety of scene -- for rescuers, for patient(s).
____ Mechanism of injury/illness (the context for what happened).
____ Number of patients (need for additional or specialized assistance).

___:___ **Initial Overview of Patient**

____ While approaching, introduce self (as a medical professional), request permission to assess and treat patient.

Note patient's mentation (initial level of consciousness using AVPU scale).

____ Alert?
____ If not alert, do they respond to verbal stimulation?
____ If not responding to verbal stimulus, then to painful stimulus? Contact patient at same-side wrist (pinches back of hand, forearm or clavicle).
____ Unconscious/unresponsive to stimuli.

___:___ **Initial physical contact**

Pertinent findings
____ Pulse
____ Skin temperature
____ Color
____ Moisture
(To be interpreted later during circulation evaluation)

Primary Assessment/Interventions

___:___ **Airway: If patient is semi-conscious or unconsciousness**

____ With gloved hands, manually open
Does it need clearing? Noisy? Gurgling?
____ Cleared by positioning or suctioning
____ Oral airway insertion (unconscious patient)
or
____ Nasal airway insertion (semi- or unconscious)

___:___ **Breathing**

If patient is spontaneously breathing, complaining of difficulty breathing or if respiratory distress is evident (noise, obvious injury and/or mechanism)

- ____ Expose and examine chest wall
- ____ Seal manually, then with occlusive dressing any obvious or potential wounds to neck and chest
- ____ "Ballpark" rate, depth--are they acceptable? If not ("ballpark" of 30+, or very infrequently--less than 10),
  - ____ Assist with
    - ____ BVM with O_2
    - ____ Demand valve
    - ____ Pocket mask
    - ____ Mask-to-mouth with O_2

If rate/depth are acceptable

- ____ Oxygen given (unless contraindicated)
- ____ Nasal cannula
- ____ Simple face mask
- ____ Rebreather (partial or non)
- ____ Other

If flail segment present, stabilize manually then splint, observe and palpate for tracheal deviation

- ____ Auscultate, quickly, bilaterally (midaxillary line) for breath sounds

___:___ **Circulation**

- ____ Was/is there a radial pulse?
  - ____ Impression (weak, rapid)
  - ____ If not, a carotid pulse?
  - ____ BCLS initiated?

___:___ ____ Is there any life-threatening hemorrhage?

- ____ Visual scan
- ____ "Pat down"

- ____ Verbalizes skin parameters
  - ____ Color
  - ____ Moisture
  - ____ Capillary refill

- ____ Does circulation appear to need support?
  - ____ Elevate feet?
  - ____ MAST/PASG?
  - ____ Keep warm?

- ____ Is jugular venous distension present?
- ____ Observe spinal injury precautions?
- ____ Utilize partner or bystanders, as necessary
- ____ Interprets patient condition and considers load-and-go (if compromise to level of consciousness and/or A, B, Cs)

Student's Name ____________________ Pass _____ Need More Practice _____
Instructor's Name __________________ Date ____________________

EMT-A Course

Lesson 2
Skills Checklist

SECONDARY SURVEY

TIME

___:___ **Secondary Survey**

- ____ Vital signs
  - ____ Pulse
  - ____ Respirations
  - ____ Blood pressure
  - ____ Temperature (relative temperature or actual, if possible)

- ____ Head-To-Toe Survey
  - ____ Reminds patient not to move, asks patient to verbalize answers rather than shake their head when spinal precautions undertaken; directs spinal immobilization.
  - ____ Talks to patient and significant others; returns to primary survey and/or interventions if patient condition warrants it.
    - ____ Palpates hair and scalp for bleeding, deformities
    - ____ Observes and palpates all areas of skull and face
    - ____ Checks eyes
    - ____ Pupils (equality, reactivity, gaze, structural defect, contact lenses)
    - ____ Consensus, focus, tracking (if patient is conscious and cooperative)
    - ____ Ptosis, conjunctival coloration, sclera
    - ____ Check ears for drainage
    - ____ Check nares for drainage, deformity, flaring

  - ____ Note patient's mouth
    - ____ Inspect for foreign material, blood clots, teeth, etc.
    - ____ Note unusual odors
    - ____ Palpates mandible for stability

  - ____ Look for injury to throat and neck
    - ____ Deviation of trachea
    - ____ Deformity, discoloration, subcutaneous emphysema, neck vein distension, medic alert tags
    - ____ Note bleeding and/or tenderness upon palpating
    - ____ Medical alert identification

  - ____ Palpates and inspects shoulder girdle
  - ____ Palpates and inspects clavicles
  - ____ Surveys chest
    - ____ Lung sounds
    - ____ Equal expansion, any deformity noted
    - ____ Palpates ribs
    - ____ Palpates sternum
    - ____ Observes for injury, discoloration, scars

- ____ Surveys abdomen
  - ____ Observes for injury, deformity, distension, discoloration, scars
  - ____ Gentle palpation for pain, rigidity
  - ____ Auscultates for presence of bowel sounds in all quadrants, when necessary

- ____ Surveys flank, back (as far as is able to)
- ____ Stress pelvis by gentle compression of pelvic bones (avoid pelvic rocking)
- ____ Check for bilateral femoral pulses
- ____ Inspect and palpate extremities
  - ____ For bilateral equality
  - ____ For pulses
  - ____ Movement
  - ____ Sensation
  - ____ Capillary refill
  - ____ For discoloration, deformity, discomfort
  - ____ For medical identification

- ____ Prioritize injuries and commence treatment when appropriate
- ____ Reassess primary and secondary priorities as needed (including vital signs)
- ____ Offers explanation of what is being done to patient, bystanders
- ____ Reassures patient

____ Investigation of Chief Complaint
- ____ Provoke
- ____ Quality
- ____ Radiation
- ____ Severity
- ____ Time of Onset
- ____ Other

____ Past Medical History
- ____ Allergies
- ____ Meds
- ____ Pertinent history
- ____ Last meal/last menstrual period
- ____ Events leading up to this
- ____ Other

____ Communications

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ___________________________

EMT-A Course

Lesson 2
Skills Checklist

ASSESSING PULSES

Carotid Pulse

____ Observe appropriate universal precautions.
____ Locate the larynx and the bordering sternocleidomastoid muscle strips.
____ Palpate the carotid pulse located in the groove lateral to the larynx.
    ____ Palpate using fingertips (not thumbs).
    ____ Palpate on only one side at a time.
____ Note the rate (usually taken for 15 seconds then multiplied by 4 to get beats-per-minute. Taken for a full minute on suspected hypothermia patients).
____ Note the regularity of the pulse.
____ Note the strength of the pulse.

Radial Pulse

____ Observe appropriate universal precautions.
____ Locate the radial stylus and the tendon in the wrist area that is just medial to it (on the anterior surface).
____ Palpate the radial pulse located in the groove between the above mentioned landmarks.
    ____ Palpate using fingertips (not thumbs).
____ Note the rate of the pulse.
____ Note the regularity of the pulse.
____ Note the strength of the pulse.

Apical Pulse

____ Observe appropriate universal precautions.
____ Insert earplugs of stethoscope into your ears (earpieces should be angled forward slightly).
____ Place the diaphragm of the stethoscope over the apical area of the heart.
____ Note the route.
____ Note the loudness or faintness.
____ Note the regularity.

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name _____________________ Date ______________________________

EMT-A Course

Lesson 2
Skills Checklist

VITAL SIGNS

Levels of Consciousness (AVPU)

____ Observe appropriate universal precautions.
____ Introduce yourself as an EMT.
____ If the patient is awake, ask his/her name, if she/he knows where they are, what time of day it is and what happened.
____ If the patient appears to be awake and can answer these questions appropriately, they are "alert".
____ If the patient appears to be unconscious but responds to voice stimuli, they are classified as responsive to "verbal stimuli".
____ If the patient does not respond to verbal stimuli but reacts to physical stimuli (such as pinching above the clavicle) classify them as responsive to painful stimuli.
____ If the patient does not respond to any stimuli, classify them as "unresponsive."

Pulse

____ Palpate the radial pulse unless the patient is unconscious or the pulse is difficult to obtain, then use the carotid pulse. (On a small child or infant use the brachial or apical pulse).
____ When you find the pulse, count it for 15 seconds (observing a watch with a second hand). Count it for a full minute if the patient appears profoundly hypothermic.
____ Note the strength and the regularity of the pulse when counting.
____ Multiply your results (from the 15-second count) by 4 and document the final results and time obtained.

Respirations

____ Observe the chest rise and fall for thirty seconds.
____ Note the depth, regularity and any abnormal breath sounds such as wheezing, crowing or snoring.
____ Observe for bilateral symmetry.
____ Multiply the results by two and record noting time obtained.
____ Use a stethoscope to listen to lung sounds.

Blood Pressure by Palpation

____ Observe appropriate universal precautions.
____ Explain the procedure to the patient.
____ Expose the brachial area.
____ Wrap the appropriate size blood pressure cuff securely around the arm one inch above the elbow with the cuff bladder centered over the brachial artery (the bladder's center is usually indicated by an imprinted line or arrow or by exiting tubing).
____ Palpate the radial pulse.

____ Close thumb screw on blood pressure cuff bulb and inflate cuff approximately 20 mmHg above the point where radial pulse is no longer felt.
____ Loosen thumb screw and release air from cuff at a rate of 2-3 mmHg per second and note gauge reading with return of first pulse beat (systolic reading).
____ Record findings, time taken and arm utilized for procedure.

Blood Pressure by Auscultation

____ Observe appropriate universal precautions.
____ Explain the procedure to the patient.
____ Expose the brachial area and observe/palpate area for local injury (if present, utilize other extremity).
____ Secure the appropriately sized blood pressure cuff above the elbow.
____ Place the stethoscope in your ears, adjusting earpieces inward and toward the nose.
____ Palpate the brachial artery.
____ Place the diaphragm of the stethoscope over the brachial artery and above or below the anterior crease of the elbow.
____ Close the thumb screw valve and inflate the cuff 20-30 mmHg above the palpated blood pressure (or above the last heard pulse).
____ Release air slowly (2-3 mmHg per second) and note the first sound of the pulse (systolic reading).
____ Continue releasing air slowly until the last sound is noted (diastolic reading).
____ Record the findings, the time obtained, and the arm utilized.

Skin Condition

____ Observe appropriate universal precautions.
____ Observe the patient's skin color, especially around the lips, ear lobes, fingernails, conjunctiva and hyperthenar area of palms.
____ Note relative skin temperature using back of your hand and patient's forehead and extremities.
____ Note warmth, presence or absence of moisture, abnormal coloration.
____ Obtain body temperature with thermometer, if condition allows.
____ Report and record findings, noting time obtained.

Pupils

____ Observe for appropriate universal precautions.
____ Observe the patient's pupils to note size, equality and appearance.
____ Check each eye for reactivity to light.
____ For conscious patient, observe for ability to track vertically and horizontally. Also observe for accommodation (have patient focus on object 18" in front of nose, move object towards tip of patient's nose; observe for dilation and bilateral inward deviation).

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________________

EMT-A Course

Lesson 2
Skills Checklist

COMMUNICATION OF PATIENT INFORMATION

- ____ Age
- ____ Gender
- ____ Scene/mechanism of injury
- ____ Chief complaint
- ____ Associated symptoms
- ____ Additional history of chief complaint for medical cases
    - ____ P - what **provokes** complaint
    - ____ Q - what is the **quality** or type of pain
    - ____ R - does it **radiate**
    - ____ S - on a 1-10 scale (1 representing "barely noticeable" and 10 representing the worst pain imaginable) what is the **severity** of the pain
    - ____ T - what was the **time** of onset of the complaint

Physical findings at ___:___

- ____ Vital signs
    - ____ Pulse
        - ____ Rate
        - ____ Rhythm
        - ____ Strength
    - ____ Respirations
        - ____ Rate
        - ____ Depth

- ____ Blood pressure
- ____ Breath sounds
- ____ Pupils
    - ____ Size (right vs. left)
    - ____ Reactivity (right vs. left)

- ____ Skin conditions
    - ____ Color
    - ____ Moisture
    - ____ Temperature

- ____ Orientation to
    - ____ Person
    - ____ Place
    - ____ Event

- ____ Glasgow Coma Score
    - ____ Eyes
    - ____ Motor
    - ____ Speech

____ Other significant findings from physical exam

____ Patient history
  ____ A - Allergies
  ____ M - Medications
  ____ P - Pertinent past medical history
  ____ L - Last meal eaten, last menstrual period
  ____ E - Events leading up to present condition

____ Treatment rendered

____ Patient information (optional in some systems)
  ____ Patient's name
  ____ Physician's name
  ____ Destination (hospital of choice)

____ ETA (estimated time of arrival)

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________________

EMT-A Course

Lesson 3
Skills Checklist

POSITIONING AN UNCONSCIOUS PATIENT TO OPEN AND MAINTAIN AN AIRWAY

TIME

___:___ **Head-tilt - chin-lift** (to be used only if neck or spinal injuries are not suspected)

____ Shake and shout.
____ Check for consciousness.
____ Place in supine position.
____ Place one hand on patient's forehead.
____ Lift patient's chin to where lower teeth are almost touching the upper teeth. DO NOT close patient's mouth.
____ While lifting jaw, apply gentle pressure to forehead.
____ May need to use your thumb to pull back patient's lower lip.

___:___ **Jaw-thrust maneuver** (to be used in cases of suspected neck or spinal injury).

____ Shake and shout.
____ Check for consciousness.
____ Place in supine position.
____ Place fingers on both sides, behind angles of patient's lower jaw.
____ With force, bring jaw forward.
____ DO NOT tilt or rotate the patient's head.
____ Pull lower lip down with thumb if necessary.

___:___ Coma Position - to be used when patient is unconscious, has no suspected neck or spinal injury, and does not need ventilatory support.

____ Support patient's head.
____ Log roll patient on side.
____ Extend patient's neck.

Student's Name ________________________ Pass ____ Need More Practice ____

Instructor's Name ______________________ Date ______________________________

BLS Performance Sheet
Adult FBAO Management: Conscious

Name ______________________________ Date ______________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine airway obstruction	Ask "Are you choking?"		
		Determine if victim can cough or speak.		
2. Heimlich Maneuver	Perform abdominal thrusts.	Stand behind the victim.		
		Wrap arms around victim's waist.		
		Make a fist with one hand and place the thumb side against victim's abdomen in the midline slightly above the navel and well below the tip of the xiphoid.		
		Grasp fist with the other hand.		
		Press into the victim's abdomen with quick upward thrusts.		
		Each thrust should be distinct and delivered with the intent of relieving the airway obstruction.		
		Repeat thrusts until either the foreign body is expelled or the victim becomes unconscious (see below).		

Victim with Obstructed Airway Becomes Unconscious (Optional Testing Sequence)

Step	Objective	Critical Performance	S	U
3. Positioning	Position the victim.	Turn on back as unit.		
		Place face up, arms by side.		
	Call for help.	Call out "Help!" or, if others respond, activate EMS system.		
4. Foreign Body Check	Perform finger sweep.*	Keep victim's face up.		
		Use tongue–jaw lift to open mouth.		
		Sweep deeply into mouth to remove foreign body.		
5. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
6. Heimlich Maneuver	(Airway is obstructed.) Perform abdominal thrusts.	Straddle victim's thighs.		
		Place heel of one hand against victim's abdomen, in the midline slightly above the navel and well below the tip of the xiphoid.		
		Place second hand directly on top of first hand.		
		Press into the abdomen with quick upward thrusts.		
		Perform 6–10 abdominal thrusts.		
7. Foreign Body Check	(Airway remains obstructed.) Perform finger sweep.*	Keep victim's face up.		
		Use tongue–jaw lift to open mouth.		
		Sweep deeply into mouth to remove foreign body.		
8. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
9. Sequencing	(Airway remains obstructed.) Repeat sequence.	Repeat Steps 6–8 until successful.†		

* During practice and testing, simulate finger sweeps.

† After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory ______ Unsatisfactory ______

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BLS Performance Sheet

Adult FBAO Management: Unconscious

Name ______________________________ Date ______________________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine unresponsiveness.	Tap or gently shake shoulder. Shout "Are you OK?"		
	Call for help.	Call out "Help!"		
	Position the victim.	Turn on back as unit, if necessary, supporting head and neck (4–10 sec).		
	Open the airway.	Use head-tilt/chin-lift maneuver.		
	Determine breathlessness.	Maintain open airway.		
		Ear over mouth, observe chest: look, listen, feel for breathing (3-5 sec).		
2. Breathing Attempt	Ventilate.	Maintain open airway.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
	(Airway is obstructed.) Ventilate.	Reposition victim's head.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
	(Airway remains obstructed.) Activate EMS system.	If someone responded to call for help, send him/her to activate EMS system.		
3. Heimlich Maneuver	Perform abdominal thrusts.	Straddle victim's thighs.		
		Place heel of one hand against victim's abdomen in the midline slightly above the navel and well below the tip of the xiphoid.		
		Place second hand directly on top of first hand.		
		Press into the abdomen with quick upward thrusts.		
		Each thrust should be distinct and delivered with the intent of relieving the airway obstruction.		
		Perform 6–10 abdominal thrusts.		
4. Foreign Body Check	Perform finger sweep.*	Keep victim's face up.		
		Use tongue–jaw lift to open mouth.		
		Sweep deeply into mouth to remove foreign body.		
5. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift maneuver.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
6. Sequencing	Repeat sequence.	Repeat Steps 3-5 until successful.†		

* During practice and testing simulate finger sweeps.

† After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Child FBAO Management: Conscious*

Name ______________________________ Date ______________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine airway obstruction.*	Ask "Are you choking?"		
		Determine if victim can cough or speak.		
2. Heimlich Maneuver	Perform abdominal thrusts (only if victim's cough is ineffective and there is increasing respiratory difficulty).	Stand behind the victim.		
		Wrap arms around victim's waist.		
		Make a fist with one hand and place the thumb side against victim's abdomen, in the midline slightly above the navel and well below the tip of the xiphoid.		
		Grasp fist with the other hand.		
		Press into the victim's abdomen with quick upward thrusts.		
		Each thrust should be distinct and delivered with the intent of relieving the airway obstruction.		
		Repeat thrusts until either the foreign body is expelled or the victim becomes unconscious (see below).		

Victim with Obstructed Airway Becomes Unconscious (Optional Testing Sequence)

3. Positioning	Position the victim.	Turn on back as unit.		
		Place face up, arms by side.		
	Call for help.	Call out "Help!" or if others respond, activate EMS system.		
4. Foreign Body Check	Manual removal of foreign body if one is found. DO NOT perform blind finger sweep.	Keep victim's face up.		
		Use tongue–jaw lift to open mouth.		
		Look into mouth; remove foreign body ONLY IF VISUALIZED.		
5. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
6. Heimlich Maneuver	(Airway is obstructed.) Perform abdominal thrusts.	Kneel at victim's feet if on the floor, or stand at victim's feet if on a table.		
		Place heel of one hand against victim's abdomen, in the midline slightly above navel and well below tip of xiphoid.		
		Place second hand directly on top of first hand.		
		Press into the abdomen with quick upward thrusts.		
		Perform 6–10 abdominal thrusts.		
7. Foreign Body Check	(Airway remains obstructed.) Manual removal of foreign body if one is found. DO NOT perform blind finger sweep.	Keep victim's face up.		
		Use tongue–jaw lift to open mouth.		
		Look into mouth, remove foreign body ONLY IF VISUALIZED.		
8. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
9. Sequencing	(Airway remains obstructed.) Repeat sequence.	Repeat Steps 6–8 until successful.†		

* This procedure should be initiated in a conscious child only if the airway obstruction is due to a witnessed or strongly suspected aspiration and if respiratory difficulty is increasing and the cough is ineffective. If obstruction is caused by airway swelling due to infection such as epiglottitis or croup, these procedures may be harmful, the child should be rushed to the nearest ALS facility, allowing the child to maintain the position of maximum comfort.

† After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory ______ Unsatisfactory ______

BLS Performance Sheet

Child FBAO Management: Unconscious

Name ______________________________ Date ________________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine unresponsiveness.	Tap or gently shake shoulder.		
		Shout "Are you OK?"		
	Call for help.	Call out "Help!"		
	Position the victim.	Turn on back as unit, if necessary, supporting head and neck (4–10 sec).		
	Open the airway.	Use head-tilt/chin-lift maneuver.		
	Determine breathlessness.	Maintain open airway.		
		Ear over mouth, observe chest: look, listen, feel for breathing (3–5 sec).		
2. Breathing Attempt	Ventilate.	Maintain open airway.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
	(Airway is obstructed.) Ventilate.	Reposition victim's head.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
	(Airway remains obstructed.) Activate EMS system.	If someone responded to call for help, send him/her to activate EMS system.		
3. Heimlich Maneuver	Perform abdominal thrusts.	Kneel at victim's feet if on the floor, or stand at victim's feet if on a table.		
		Place heel of one hand against victim's abdomen in the midline slightly above navel and well below tip of xiphoid.		
		Place second hand directly on top of first hand.		
		Press into the abdomen with quick upward thrusts.		
		Each thrust should be distinct and delivered with the intent of relieving the airway.		
		Perform 6–10 abdominal thrusts.		
4. Foreign Body Check	(Airway remains obstructed.) Manual removal of foreign body if one is found. DO NOT perform blind finger sweep.	Keep victim's face up.		
		Use tongue-jaw lift to open mouth.		
		Look into mouth, remove foreign body ONLY IF VISUALIZED.		
5. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift maneuver.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
6. Sequencing	Repeat sequence.	Repeat Steps 3–5 until successful.*		

* After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Infant FBAO Management: Conscious*

Name ______________________________ Date ____________________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine airway obstruction.*	Observe breathing difficulties.*		
2. Back Blows	Deliver 4 back blows.	Supporting head and neck with one hand, straddle infant face down, head lower than trunk, over your forearm supported on your thigh.		
		Deliver 4 back blows, forcefully, between the shoulder blades with the heel of the hand (3–5 sec).		
3. Chest Thrusts	Deliver 4 chest thrusts.	While supporting the head, sandwich infant between your hands and turn on back, with head lower than trunk.		
		Deliver 4 thrusts in the midsternal region in the same manner as external chest compressions, but at a slower rate (3–5 sec).		
4. Sequencing	Repeat sequence.	Repeat Steps 2 and 3 until either the foreign body is expelled or the infant becomes unconscious (see below).		

Infant with Obstructed Airway Becomes Unconscious (Optional Testing Sequence)

5. Call for Help.	Call for help.	Call out "Help!" or, if others respond, activate EMS system.		
6. Foreign Body Check	Manual removal of foreign body if one is found (tongue–jaw lift, NOT blind finger sweep).	Keep victim's face up.		
		Place thumb in infant's mouth, over tongue. Lift tongue and jaw forward with fingers wrapped around lower jaw.		
		Look into mouth, remove foreign body ONLY IF VISUALIZED.		
7. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Attempt to ventilate.		
8. Back Blows	(Airway is obstructed.) Deliver 4 back blows.	Supporting head and neck with one hand, straddle infant face down, head lower than trunk, over your forearm supported on your thigh.		
		Deliver 4 back blows, forcefully, between the shoulder blades with the heel of the hand (3–5 sec).		
9. Chest Thrusts	Deliver 4 chest thrusts.	While supporting the head and neck, sandwich infant between your hands and turn on back, with head lower than trunk.		
		Deliver 4 thrusts in the midsternal region in the same manner as external chest compressions, but at a slower rate (3–5 sec).		
10. Foreign Body Check	(Airway remains obstructed.) Manual removal of foreign body if one is found.	Keep victim's face up.		
		Do tongue–jaw lift, but NOT blind finger sweep.		
		Look into mouth, remove foreign body ONLY IF VISUALIZED.		
11. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
12. Sequencing	(Airway remains obstructed.) Repeat sequence.	Repeat Steps 8–11 until successful.†		

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* This procedure should be initiated in a conscious infant only if the airway obstruction is due to a witnessed or strongly suspected aspiration and if respiratory difficulty is increasing and the cough is ineffective. If the obstruction is caused by airway swelling due to infections, such as epiglottitis or croup, these procedures may be harmful; the infant should be rushed to the nearest ALS facility, allowing the infant to maintain the position of maximum comfort.

† After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Infant FBAO Management: Unconscious

Name ______________________________ Date ______________

Step	Objective	Critical Performance	S	U
1. Assessment	Determine unresponsiveness.	Tap or gently shake shoulder.		
	Call for help	Call out "Help!"		
	Position the infant.	Turn on back as unit, if necessary, supporting head and neck.		
		Place on firm, hard surface		
	Open the airway.	Use head-tilt/chin-lift maneuver to sniffing or neutral position.		
		Do not overextend the head		
	Determine breathlessness.	Maintain open airway		
		Ear over mouth, observe chest: look, listen, feel for breathing (3-5 sec)		
2. Breathing Attempt	Ventilate.	Maintain open airway		
		Make tight seal on mouth and nose of infant with rescuer's mouth.		
		Attempt to ventilate.		
	(Airway is obstructed.) Ventilate.	Reposition infant's head.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
	(Airway remains obstructed.) Activate EMS system	If someone responded to call for help, send him/her to activate EMS system.		
3. Back Blows	Deliver 4 back blows.	Supporting head and neck with one hand, straddle infant face down, head lower than trunk, over your forearm supported on your thigh.		
		Deliver 4 back blows, forcefully, between the shoulder blades with the heel of the hand (3-5 sec).		
4. Chest Thrusts	Deliver 4 chest thrusts.	While supporting the head and neck, sandwich infant between your hands and turn on back, with head lower than trunk.		
		Deliver 4 thrusts in the midsternal region in the same manner as external chest compressions, but at a slower rate (3-5 sec)		
5. Foreign Body Check	(Airway remains obstructed.) Manual removal of foreign body if one is found (tongue-jaw lift, NOT blind finger sweep).	Keep victim's face up		
		Place thumb in infant's mouth, over tongue. Lift tongue and jaw forward with fingers wrapped around lower jaw.		
		Look into mouth: remove foreign body ONLY IF VISUALIZED.		
6. Breathing Attempt	Ventilate.	Open airway with head-tilt/chin-lift.		
		Seal mouth and nose properly.		
		Reattempt to ventilate.		
7. Sequencing	Repeat sequence.	Repeat Steps 3-6 until successful.*		

* After airway obstruction is cleared, ventilate twice and proceed with CPR as indicated.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

EMT-A Course

Lesson 6
Skills Checklist

AIRWAY INSERTION

TIME
___:___ **Airway Insertion**

____ Works from the side of the head; rescuer is gloved, considers eye protection.

____ Chooses proper sized airway (corner of mouth to angle of jaw or earlobe for oral/nare to angle of jaw or earlobe).

____ Opens mouth of patient using cross-finger technique.

____ Inserts oral airway upside down into mouth and rotates into proper position after reaching soft palate (airway can be inserted turned 90 degrees from correct position while tongue is flattened using a tongue blade).

____ Removes airway if patient regains consciousness or significant gag reflex.

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________________

EMT-A Course

Lesson 6
Skills Checklist

OXYGEN DELIVERY SYSTEM (Portable)

TIME
___:___ **Oxygen Delivery System (Portable)**

____ Removes protective wrap, if present, from "new" tank and releases small amount of oxygen from tank (to clear connection ports for proper coupling).

____ Attaches reducing valve/yoke assembly; using gasket if necessary.

____ "Cracks" the tank properly, to assure proper seating of reducing valve assembly.

____ Connects O_2 delivery device (e.g., mask cannula, etc.).

____ Opens tank valve.

____ Turns on flow meter to appropriate rate.

____ Demonstrates how to shut down system.

____ Demonstrates how to bleed out or drain the system and return it to storage status.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ___________________________

EMT-A Course

Lesson 6
Skills Checklist

POSITIVE PRESSURE DEMAND VALVE RESUSCITATOR

TIME
___:___ **Positive Pressure Demand Valve Resuscitator**

____ Assembles unit, turns on oxygen.

____ Considers use of oral/nasal airway for unconscious patient using appropriate cross-finger technique to open mouth.

____ Places mask over patient's mouth and nose, utilizing appropriate airway maintenance/positioning.

____ For conscious patient, notes that as patient inhales, negative inspiratory pressure triggers the release of oxygen.

____ For the unconscious patient, depresses button on top of demand valve, releasing button as patient's chest starts to rise.

____ Ventilates at least 12 times per minute (for the adult patient).

____ Shuts down system.

____ Drains or "bleeds down" system.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

EMT-A Course

Lesson 6
Skills Checklist

BAG-MASK

TIME
___:___ **Bag Mask**

____ Assembles bag-valve device, including O_2 source and reservoir.

____ Verbalizes oral/nasal airway insertion for unconscious patient using appropriate cross-finger technique.

____ Spreads face mask and seals properly on face.

____ Holds mask on face with thumb and index finger forming a "C" and the other fingers helping displace mandible to open airway.

____ Turns bag perpendicular to patient and ventilates at least 12 times per minute (for the adult patient).

____ Observes for chest movement and corrects any mask leaks.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

EMT-A Course

Lesson 6
Skills Checklist

SUCTION

TIME
___:___ **Suction** (mechanical)

____ Assembles and turns on unit to trial test operation.

____ Measures appropriate length catheter tip suction tubing (corner of mouth to angle of jaw/earlobe for oral suctioning; nare opening to angle of jaw/earlobe for nasal suctioning) after applying catheter to primary suction tubing.

____ Suctions across back of patient's mouth and on the way out (not suctioning while insertion) for no more than 15 seconds*.

____ Considers rinse solution for tubing or use of tonsil-tip rigid device.

____ Shuts down unit.

*Time limitations may vary from 10-15 seconds for oropharyngeal suctioning, depending on reference source (as evacuating air can aggravate hypoxia) it should also be noted that a clear, patent airway is a priority; if rescuers reach the suggested time limits and still have a compromised airway, consideration should be given to using larger diameter suction adjuncts or other alternatives for clearing the airway.

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________________

BLS Performance Sheet

Adult One-Rescuer CPR

Name ______________________________ Date ______________

Step	Objective	Critical Performance	S	U
1. AIRWAY	Assessment: Determine unresponsiveness.	Tap or gently shake shoulder.		
		Shout "Are you OK?"		
	Call for help.	Call out "Help!"		
	Position the victim.	Turn on back as unit, if necessary, supporting head and neck (4–10 sec).		
	Open the airway.	Use head-tilt/chin-lift maneuver.		
2. BREATHING	Assessment: Determine breathlessness.	Maintain open airway.		
		Ear over mouth, observe chest: look, listen, feel for breathing (3–5 sec).		
	Ventilate twice.	Maintain open airway.		
		Seal mouth and nose properly.		
		Ventilate 2 times at 1–1.5 sec/inspiration.		
		Observe chest rise (adequate ventilation volume.)		
		Allow deflation between breaths.		
3. CIRCULATION	Assessment: Determine pulselessness.	Feel for carotid pulse on near side of victim (5–10 sec).		
		Maintain head-tilt with other hand.		
	Activate EMS system.	If someone responded to call for help, send him/her to activate EMS system.		
		Total time, Step 1—Activate EMS system: 15–35 sec.		
	Begin chest compressions.	Rescuer kneels by victim's shoulders.		
		Landmark check prior to hand placement.		
		Proper hand position throughout.		
		Rescuer's shoulders over victim's sternum.		
		Equal compression-relaxation.		
		Compress 1½ to 2 inches.		
		Keep hands on sternum during upstroke.		
		Complete chest relaxation on upstroke.		
		Say any helpful mnemonic.		
		Compression rate: 80–100/min (15 per 9–11 sec).		
4. Compression/Ventilation Cycles	Do 4 cycles of 15 compressions and 2 ventilations.	Proper compression/ventilation ratio: 15 compressions to 2 ventilations per cycle.		
		Observe chest rise: 1–1.5 sec/inspiration; 4 cycles/52–73 sec.		
5. Reassessment*	Determine pulselessness.	Feel for carotid pulse (5 sec).† If there is no pulse, go to Step 6.		
6. Continue CPR	Ventilate twice.	Ventilate 2 times.		
		Observe chest rise: 1–1.5 sec/inspiration.		
	Resume compression/ ventilation cycles.	Feel for carotid pulse every few minutes.		

* If 2nd rescuer arrives to replace 1st rescuer: (a) 2nd rescuer identifies self by saying "I know CPR. Can I help?" (b) 2nd rescuer then does pulse check in Step 5 and continues with Step 6. (During practice and testing only one rescuer actually ventilates the manikin. The 2nd rescuer simulates ventilation.) (c) 1st rescuer assesses the adequacy of 2nd rescuer's CPR by observing chest rise during ventilations and by checking the pulse during chest compressions.

† If pulse is present, open airway and check for spontaneous breathing: (a) If breathing is present, maintain open airway and monitor pulse and breathing. (b) If breathing is absent, perform rescue breathing at 12 times/min and monitor pulse.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Adult Two-Rescuer CPR*

Name ______________________________ Date ______________

Step	Objective	Critical Performance	S	U
1. AIRWAY	**One rescuer (ventilator):**			
	Assessment: Determine unresponsiveness.	Tap or gently shake shoulder.		
		Shout "Are you OK?"		
	Position the victim.	Turn on back if necessary (4–10 sec).		
	Open the airway.	Use a proper technique to open airway.		
2. BREATHING	Assessment: Determine breathlessness.	Look, listen, and feel (3–5 sec).		
	Ventilate twice.	Observe chest rise: 1–1.5 sec/inspiration.		
3. CIRCULATION	Assessment: Determine pulselessness.	Feel for carotid pulse (5–10 sec).		
	State assessment results.	Say "No pulse."		
	Other rescuer (compressor): Get into position for compressions.	Hands, shoulders in correct position.		
	Locate landmark notch.	Landmark check.		
4. Compression/Ventilation Cycles	**Compressor:** Begin chest compressions.	Correct ratio compressions/ventilations: 5/1		
		Compression rate: 80–100/min (5 compressions/3–4 sec).		
		Say any helpful mnemonic.		
		Stop compressing for each ventilation.		
	Ventilator: Ventilate after every 5th compression and check compression effectiveness.	Ventilate 1 time (1–1.5 sec/inspiration).		
		Check pulse occasionally to assess compressions.		
	(Minimum of 10 cycles.)	Time for 10 cycles: 40–53 sec.		
5. Call for Switch	**Compressor:** Call for switch when fatigued.	Give clear signal to change.		
		Compressor completes 5th compression.		
		Ventilator completes ventilation after 5th compression.		
6. Switch	Simultaneously switch:			
	Ventilator: Move to chest.	Move to chest.		
		Become compressor.		
		Get into position for compressions.		
		Locate landmark notch.		
	Compressor: Move to head.	Move to head.		
		Become ventilator.		
		Check carotid pulse (5 sec).		
		Say "No pulse."		
		Ventilate once (1–1.5 sec/inspiration).†		
7. Continue CPR	Resume compression/ventilation cycles.	Resume Step 4.		

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* (a) If CPR is in progress with one rescuer (lay person), the entrance of the two rescuers occurs after the completion of one rescuer's cycle of 15 compressions and 2 ventilations. The EMS should be activated first. The two new rescuers start with Step 6. (b) If CPR is in progress with one healthcare provider, the entrance of a second healthcare provider is at the end of a cycle after check for pulse by first rescuer. The new cycle starts with one ventilation by the first rescuer, and the second rescuer becomes the compressor.

† During practice and testing only one rescuer actually ventilates the manikin. The other rescuer simulates ventilation.

Instructor ______________________ ______________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Child Two-Rescuer CPR*

Name ______________________________ Date ________________

Step	Objective	Critical Performance	S	U
1. AIRWAY	**One rescuer (ventilator):**			
	Assessment: Determine unresponsiveness.	Tap or gently shake shoulder		
		Shout "Are you OK?"		
	Position the victim	Turn on back if necessary (4–10 sec)		
	Open the airway	Use a proper technique to open airway		
2. BREATHING	Assessment: Determine breathlessness	Look, listen, and feel (3–5 sec).		
	Ventilate twice	Observe chest rise: 1–1.5 sec/inspiration		
3. CIRCULATION	Assessment: Determine pulselessness.	Feel for carotid pulse (5–10 sec).		
	State assessment results.	Say "No pulse"		
	Other rescuer (compressor): Get into position for compressions.	Hand, shoulders in correct position		
	Locate landmark notch.	Landmark check.		
4. Compression/Ventilation Cycles	**Compressor:** Begin chest compressions.	Correct ratio compressions/ventilations: 5/1.		
		Compression rate 80–100/min (5 compressions/3–4 sec).		
		Say any helpful mnemonic.		
		Stop compressing for each ventilation.		
	Ventilator: Ventilate after every 5th compression and check compression effectiveness.	Ventilate 1 time (1–1.5 sec/inspiration).		
		Check pulse occasionally to assess compressions.		
	(Minimum of 10 cycles.)	Time for 10 cycles: 40–53 sec		
5. Call for Switch	**Compressor:** Call for switch when fatigued.	Give clear signal to change.		
		Compressor completes 5th compression.		
		Ventilator completes ventilation after 5th compression.		
6. Switch	Simultaneously switch:			
	Ventilator: Move to chest.	Move to chest.		
		Become compressor.		
		Get into position for compressions.		
		Locate landmark notch.		
	Compressor: Move to head.	Move to head.		
		Become ventilator.		
		Check carotid pulse (5 sec).		
		Say "No pulse."		
		Ventilate once (1–1.5 sec/inspiration).†		
7. Continue CPR	Resume compression/ventilation cycles.	Resume Step 4.		

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* (a) If CPR is in progress with one rescuer (layperson), the entrance of the two rescuers occurs after the completion of one rescuer's cycle of 5 compressions and 1 ventilation. The EMS should be activated first. The two new rescuers start with Step 6. (b) If CPR is in progress with one healthcare provider, the entrance of a second healthcare provider is at the end of a cycle after check for pulse by first rescuer. The new cycle starts with one ventilation by the first rescuer, and the second rescuer becomes the compressor.

† During practice and testing only one rescuer actually ventilates the manikin. The other rescuer simulates ventilation.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

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BLS Performance Sheet

Child One-Rescuer CPR[*]

Name ______________________________ Date ____________________

Step	Objective	Critical Performance	S	U
1. AIRWAY	Assessment: Determine unresponsiveness	Tap or gently shake shoulder		
		Shout "Are you OK?"		
	Call for help.	Call out "Help!"		
	Position the victim	Turn on back as unit, if necessary, supporting head and neck (4–10 sec).		
	Open the airway	Use head-tilt/chin-lift maneuver.		
2. BREATHING	Assessment: Determine breathlessness	Maintain open airway		
		Ear over mouth, observe chest: look, listen, feel for breathing (3–5 sec).		
	Ventilate twice	Maintain open airway		
		Seal mouth and nose properly		
		Ventilate 2 times at 1–1.5 sec/inspiration.		
		Observe chest rise		
		Allow deflation between breaths.		
3. CIRCULATION	Assessment: Determine pulselessness.	Feel for carotid pulse on near side of victim (5–10 sec).		
		Maintain head-tilt with other hand.		
	Activate EMS system.	If someone responded to call for help, send him/her to activate EMS system.		
		Total time: Step 1—Activate EMS system: 15–35 sec.		
	Begin chest compressions	Rescuer kneels by victim's shoulders.		
		Landmark check prior to initial hand placement.[§]		
		Proper hand position throughout.		
		Rescuer's shoulders over victim's sternum.		
		Equal compression–relaxation.		
		Compress 1 to 1½ inches.		
		Keep hand on sternum during upstroke.		
		Complete chest relaxation on upstroke.		
		Say any helpful mnemonic.		
		Compression rate: 80–100/min (5 per 3–4 sec).		
4. Compression/Ventilation Cycles	Do 10 cycles of 5 compressions and 1 ventilation.	Proper compression/ventilation ratio: 5 compressions to 1 slow ventilation per cycle.		
		Observe chest rise: 1–1.5 sec/inspiration (10 cycles/60–87 sec).		
5. Reassessment[†]	Determine pulselessness.	Feel for carotid pulse (5 sec).[‡] If there is no pulse, go to Step 6.		
6. Continue CPR	Ventilate once.	Ventilate one time.		
		Observe chest rise: 1–1.5 sec/inspiration.		
	Resume compression/ ventilation cycles	Feel for carotid pulse every few minutes.		

[*] If child is above age of approximately 8 years, the method for adults should be used.

[†] 2nd rescuer arrives to replace 1st rescuer: (a) 2nd rescuer identifies self by saying "I know CPR. Can I help?" (b) 2nd rescuer then does pulse check in Step 5 and continues with Step 6. (During practice and testing only one rescuer actually ventilates the manikin. The 2nd rescuer simulates ventilation.) (c) 1st rescuer assesses the adequacy of 2nd rescuer's CPR by observing chest rise during ventilations and by checking the pulse during chest compressions.

[‡] If pulse is present, open airway and check for spontaneous breathing. (a) If breathing is present, maintain open airway and monitor breathing and pulse. (b) If breathing is absent, perform rescue breathing at 15 times/min and monitor pulse.

[§] Thereafter, check hand position visually.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

BLS Performance Sheet

Infant CPR

Name ______________________________ Date ________________

Step	Objective	Critical Performance	S	U
1. AIRWAY	Assessment: Determine unresponsiveness.	Tap or gently shake shoulder		
	Call for help.	Call out "Help!"		
	Position the infant.	Turn on back as unit, supporting head and neck.		
		Place on firm, hard surface.		
	Open the airway.	Use head-tilt/chin-lift maneuver to sniffing or neutral position.		
		Do not overextend the head.		
2. BREATHING	Assessment: Determine breathlessness.	Maintain open airway.		
		Ear over mouth; observe chest: look, listen, feel for breathing (3–5 sec).		
	Ventilate twice.	Maintain open airway.		
		Make tight seal on infant's mouth and nose with rescuer's mouth.		
		Ventilate 2 times at 1–1.5 sec/inspiration.		
		Observe chest rise.		
		Allow deflation between breaths.		
3. CIRCULATION	Assessment: Determine pulselessness.	Feel for brachial pulse (5–10 sec).		
		Maintain head-tilt with other hand.		
	Activate EMS system.	If someone responded to call for help, send him/her to activate EMS system.		
		Total time, Step 1—Activate EMS system: 15–35 sec.		
	Begin chest compressions.	Imagine line between nipples (intermammary line).		
		Place 2–3 fingers on sternum, 1 finger's width below intermammary line.		
		Equal compression–relaxation.		
		Compress vertically, ½ to 1 inches.		
		Keep fingers on sternum during upstroke.		
		Complete chest relaxation on upstroke.		
		Say any helpful mnemonic.		
		Compression rate: at least 100/min (5 in 3 sec or less).		
4. Compression/Ventilation Cycles	Do 10 cycles of 5 compressions and 1 ventilation.	Proper compression/ventilation ratio: 5 compressions to 1 slow ventilation per cycle.		
		Pause for ventilation.		
		Observe chest rise: 1–1.5 sec/inspiration; 10 cycles/45 sec or less.		
5. Reassessment	Determine pulselessness.	Feel for brachial pulse (5 sec).* If there is no pulse, go to Step 6.		
6. Continue CPR	Ventilate once.	Ventilate 1 time.		
		Observe chest rise: 1–1.5 sec/inspiration.		
	Resume compression/ventilation cycles.	Feel for brachial pulse every few minutes.		

* If pulse is present, open airway and check for spontaneous breathing. (a) If breathing is present, maintain open airway and monitor breathing and pulse. (b) If breathing is absent, perform rescue breathing at 20 times/min and monitor pulse.

Instructor ______________________________ Check: Satisfactory _____ Unsatisfactory _____

EMT-A Course

Lesson 7
Skills Checklist

CONTROLLING HEMORRHAGE

The following procedures should be done while observing universal precautions

TIME

___:___ **Direct Pressure**

____ Exposes injury site, cutting away clothing if necessary.
____ Selects appropriate sized dressing and applies direct pressure with gloved hand over the wound site (if a delay in obtaining a suitable dressing, uses gloved hand directly).
____ Considers elevating extremity while continuing direct pressure.
____ Secures dressings at site with pressure bandage.

___:___ **Pressure Point**

____ Locate the appropriate supplying artery to the injury.
____ Apply pressure over artery, compressing it against a firm structure (e.g., bony prominence) with fingers or hand.

___:___ **Tourniquet**

____ Considers use of a blood pressure cuff.
____ Inflates cuff to just beyond the point at which bleeding stops.
____ Attach tape or write directly on patient's forehead "TK" and the time it was applied.

Student's Name _________________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date _______________________________

EMT-A Course

Lesson 9
Skills Checklist

MAST/PASG

TIME

___:___ **MAST/PASG**

____ Readies equipment; lays out garment and readies pump.
____ Verifies patient needs (shock with systolic less than 80 or less than 90 with clear symptoms or ensuing shock).
____ Removes patient's clothing below the waist, assesses for and notes possible injuries; cover open wounds with appropriate dressings and clean sheets over significant burns of lower extremities.
____ Slide garment under patient.
____ Secures legs and abdominal compartment.
____ Connects all hoses and checks valve settings (open vs. closed).
____ In cases of profound shock, inflates all compartments at the same time.
____ Considers left--right--abdominal sequence for "marginally unfavorable" pressures; legs only with abdominal complications such as impaled objects.
____ Inflation continued until
  ____ Pressure gauge reading (Jobst) or
  ____ Velcro "crackles" as it begins to pull away, or
  ____ Satisfactory blood pressure obtained
  ____ Pop-off valves release excess air
____ Commences deflation procedures only after requested to do so by Medical Control.
____ Release air from one valve at a time for 2-5 seconds, rechecking blood pressure after each release.
____ Stops deflation if blood pressure falls 5 or more mmHg in pressure after a valve release.
____ Release one section at a time; first the abdominal section, then right then left leg.
____ As each compartment is deflated, the valves are then closed to that compartment.
____ When deflation is completed, hoses are disconnected, MAST are cleaned and returned to storage case with the pump.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________________

EMT-A Course

Lesson 10
Skills Checklist

DRESSING AND BANDAGING

TIME

___:___ **Identifying Dressings**
____ Gauze dressings
____ 2x2 and/or 4x4
____ 5x9 and/or 8x10
____ 9x36 (universal or trauma dressings)

___:___ **Identifying bandaging materials**
____ Tape
____ Cravat/triangular bandages
____ Roller gauze

___:___ **Demonstrate application of appropriate dressing and bandaging for**

___:___ ____ **Laceration of the Arm/Leg**
____ Observe universal precautions (including protective gloves when potential for body fluids).
____ Expose and examine the wound; examine for distal neurovascular impairment.
____ Select proper dressing.
____ Consider sterile technique when possible when opening and applying dressing.
____ Select proper bandage material.
____ Place dressing on wound.
____ Consider firm pressure if bleeding from site needs to be controlled.
____ Properly anchor the bandage distal to site.
____ With roller gauze, encircle limb with bandaging material.
____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).
____ Use circular, open or closed or spiral turns to complete bandaging.
____ Secure proximal end of bandage using tape, product clips or tucking of excess bandage.
____ Re-evaluate distal neurovascular status.

___:___ ____ **Laceration of Elbow/Knee**
____ Observe appropriate universal precautions.
____ Expose and examine the wound; evaluate distal neurovascular status of extremity.
____ Position extremity (splint as found).
____ Select appropriate dressing.
____ Select appropriate bandage.

____ Place dressing on wound.
____ Properly anchor the bandage distal to site
    ____ With roller gauze, encircle limb with bandaging material.
    ____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
    ____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).
____ Use figure-of-eight turns with bandage to secure dressing to site.
____ Secure proximal end of bandage using tape, product clips, or tucking of excess bandage.
____ Vertalize immobilization of extremity.
____ Re-evaluate distal neurovascular status.

___:___ ____ **Laceration of Hand/Foot**
____ Observe appropriate universal precautions.
____ Expose and examine the wound; evaluate distal neurovascular status of extremity.
____ Position extremity (with hand, use "position of function" with hand in grip-like position).
____ Select appropriate dressing.
____ Select appropriate bandage.
____ Place dressing on wound.
____ Properly anchor the bandage distal to site.
    ____ With roller gauze, encircle limb with bandaging material.
    ____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
    ____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).
____ Use circular, spiral and figure-of-eight turns to complete bandaging.
____ Secure proximal end of bandage using tape, product clips, or tucking of excess bandage.
____ Re-evaluate distal neurovascular status.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ______________________

EMT-A Course

Lesson 10
Skills Checklist

AVULSIONS

TIME
___:___ ____ **Avulsions**

____ Observe appropriate universal precautions.

____ Expose and examine wound; check distal neurovascular status in extremity injuries.

____ Remove any coarse loose debris.

____ Reposition tissue flap to correct anatomical position.

____ Select appropriate dressing.

____ Select appropriate bandage.

____ Place the dressing over the wound.

____ Properly anchor the bandage distal to site.
  ____ With roller gauze, encircle limb with bandaging material.
  ____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
  ____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).

____ Complete the bandaging.

____ Secure the end of the bandage.

____ Re-evaluate distal neurovascular status, if necessary.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

EMT-A Course

Lesson 10
Skills Checklist

IMPALED OBJECTS

TIME
___:___ ____ **Impaled Objects**

____ Observe appropriate universal precautions.

____ Expose and examine the wound; evaluate distal neurovascular status, if extremity is involved.

____ Access impaled object and consider
  ____ Removal if object impairs airway.
  ____ Shortening object or disengaging it if patient care and transport is otherwise impossible.

____ Stabilize object (done by partner) covering sharp edges with cloth or tape.
  ____ Small object - use hand on patient's body, object between fingers.
  ____ Large object - grasp object near puncture site, using hands and "splinting to the body" by resting hands and/or forearms on patient's body.

____ Select dressing (first layer occlusive in cases possibly involving airway).

____ Bulky dressings and other material as needed to place around impaled object to stabilize it.

____ Secure dressing in place with
  ____ Tape
  ____ Triangular bandage
  ____ Roller gauze

Student's Name ______________________ Pass ____ Need More Practice ____

Instructor's Name ______________________ Date ______________________

EMT-A Course

Lesson 12
Skills Checklist

HARE TRACTION SPLINT APPLICATION

TIME
___:___ **Hare Traction Splint Application**

____ Observe appropriate universal precautions.
____ Identify possible mid-shaft femur fracture.
____ First rescuer stabilizes the injured leg.
____ Second rescuer removes shoe and sock, cuts pant leg to expose injury site; completes assessment of extremity (other injuries?)
____ Second rescuer checks neurovascular status (pulse, sensation, movement, capillary refill).
____ Ankle hitch is applied by second rescuer without lifting leg; manual in-line traction is applied by same rescuer using ankle hitch.
____ First rescuer walks around patient and adjusts splint length to extend from gluteal fold/greater trochanter area (level with ischial tuberosity) to a point 8-12 inches beyond the heel of the "good" leg's foot.
____ First rescuer places splint along lateral aspect of injured leg and lifts extremity with support proximal and distal to suspected site of fracture, with second rescuer maintaining inline traction and assisting with lift.
____ With extremity properly elevated, first rescuer uses one hand (usually the one providing distal support) or other acceptable method while continuing to support injured extremity, to properly position traction splint beneath patient's extremity and lowers leg onto the splint.
____ The ischial strap is applied after padding is placed over the area of the femoral artery, by the first rescuer.
____ First rescuer secures ankle strap rings to traction splint and applies mechanical traction.
____ First rescuer stabilizes leg to splint by securing remaining straps, securing two above the knee (above and below fracture site) and two below the knee, while
____ Second rescuer re-evaluates neurovascular status of patient (distal pulse, sensation, movement, capillary refill).

Remember to explain what you are doing before and during your actions to the patient and pertinent bystanders.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

EMT-A Course

Lesson 12
Skills Checklist

SAGER TRACTION SPLINT

TIME
___:___ **Sager Traction Splint**

____ Observe appropriate universal precautions.

____ Expose and examine injured leg; assess distal neurovascular status of extremity

____ If available, helper manually stabilizes fracture (without manual traction).

____ Padded bar or splint is placed against the perennial area of the patient and the splint is adjusted to the appropriate length.

____ The ischial strap is secured around the leg laterally (the splint may also be placed outside of the leg with the ischial strap then secured medially).

____ Ankle hitch is applied and secured about the ankle.

____ Splint is attached to the ankle hitch on patient (adjust hitch connecting strips).

____ Distal splint is extended until the wheel at the end displays the correct amount of traction (10 % of patient's estimated body weight. This may need to be adjusted as the splint settles and patient relaxes).

____ Elastic support wraps are secured after being positioned over the femur, knee and leg.

____ Ankles are tied together to prevent lateral rotation and misalignment using figure-eight format.

____ Reassess the distal neurovascular status of the injured extremity.

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________________

EMT-A Course

Lesson 14
Skills Checklist

EYE AVULSION

TIME
___:___ ____ **Eye Avulsion**

- ____ Observe appropriate universal precautions.
- ____ Examine wound.
- ____ Select and prepare dressing.
  - ____ 4x4s, some with center hole cut OR
  - ____ Roller gauze wrapped to doughnut-shaped ring
  - ____ Paper or styrofoam cups (one with pinhole in bottom).
- ____ Select bandaging material (usually roller gauze).
- ____ Gently place cut-out 4x4s or roller gauze ring over injured eye.
- ____ Place a cup over injured eye on cut-out 4x4s or gauze ring.
  - ____ Remove bottom of cup as necessary to accommodate impaled objects and stabilize object with bulky dressings.
- ____ Place a 4x4 or preferably, a paper or styrofoam cup with the pinhole over the uninjured eye (this gives a focus point of light to look at and reduce consensual movement).
  - ____ If both eyes are injured
    - ____ Gently place cut-out 4x4s or roller gauze ring over injured eyes.
    - ____ Place a cup over each injured eye on cut-out 4x4's or gauze ring.
    - ____ Remove bottom of cup as necessary to accommodate impaled objects and stabilize object with bulky dressings.
- ____ Use roller gauze to bandage dressings in place.
- ____ Properly anchor the bandage distal to site.
  - ____ With roller gauze, encircle limb with bandaging material.
  - ____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
  - ____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).
- ____ Use circular wraps around cups to help secure, in combination with figure-of-eight turns and circle wraps around head.
- ____ Secure end of bandage.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name __________________ Date ________________________

EMT-A Course

Lesson 14

Skills Checklist

LACERATION OF FOREHEAD/SCALP/HEAD

TIME

___:___ ____ **Laceration of Forehead/Scalp/Head**

- ____ Observe appropriate universal precautions.
- ____ Examine wound.
- ____ Select appropriate dressing.
- ____ Select appropriate bandage.
- ____ Place dressing on wound
- ____ Properly anchor the bandage distal to site.
  - ____ With roller gauze, encircle limb with bandaging material.
  - ____ As second pass around extremity occurs, fold the exposed end of bandage back over top of second pass.
  - ____ Anchor distal end by wrapping third pass identically over second pass (thereby trapping and securing distal end of gauze roller between pass two and three).
  - ____ Wraps around head need to pass behind the ear and below the occipital eminence to keep from sliding up.
- ____ Complete bandaging to secure dressing. To secure scalp/head dressing, follow initial anchoring with back and forth passages of folds of roller gauze (folds must extend down over initial anchoring site) followed by wrapping again around anchor area AND/OR demonstrate securement with a triangular bandage/cravat.
- ____ Secure end of bandaging material.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ______________________

EMT-A Course

Lesson 16
Skills Checklist

LACERATION OF NECK/SHOULDER/HIP

TIME
___:___ ____ **Laceration of Neck/Shoulder/Hip**

____ Observe appropriate universal precautions.

____ Expose and examine the wound.

____ Select proper dressing (consider occlusive for deep lacerations to the neck).

____ Place the dressing over the wound.

____ Secure the dressing with a bandage.

____ Secure end of bandage.

____ Splint supporting structures as necessary.

Student's Name __________________________ Pass _____ Need More Practice _____

Instructor's Name _______________________ Date ________________________________

EMT-A Course

Lesson 16
Skills Checklist

THORACIC INJURIES - OPEN

TIME
___:___ ____ **Thoracic Injuries - Open**

____ Observe appropriate universal precautions.

____ Expose and examine (check for entrance and exit wounds)
  ____ Auscultate for lung sounds.

____ Manually seal wound as patient exhales.

____ Select occlusive dressing approximately 2" larger than wound (e.g., petroleum gauze, plastic wrap, aluminum foil).

____ Replace manual seal with occlusive dressing as patient exhales.

____ Seal three sides of occlusive dressing with tape (preferably nonporous), alternative is to ask patient to forcibly exhale and tape down fourth side.

____ If patient condition worsens and there is evidence of a developing tension pneumothorax, consider releasing the fourth side, ask patient to forcibly exhale again and retape.

____ Consider transporting patient on affected side with high flow O_2 (use bag-valve-mask, if necessary to assist).

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

EMT-A Course

Lesson 16
Skills Checklist

FLAIL CHEST

TIME
___:___ ____ **Flail Chest**

____ Observe appropriate universal precautions.

____ Expose and examine injury site.
  ____ Auscultate lung sounds.

____ Manually stabilize flailed segment as patient exhales (using hand to splint flailed area to surrounding intact thoracic elements.)

____ Select and prepare splinting material.
  ____ Folded towel or bulky dressings to injury site OR
  ____ Small pillow to injury site.

____ Secure splinting material during exhalation.
  ____ Tape 6" beyond borders of suspect injury site (usually three or four strips) OR
  ____ Have patient hold to site manually OR
  ____ Use three or more cravats (being careful not to impair respirations).

____ Consider transporting patient on affected side.

____ Consider transporting patient on affected side with high flow O_2 (use bag-valve-mask to assist ventilations, if necessary).

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________________

EMT-A Course

Lesson 16
Skills Checklist

ABDOMINAL EVISCERATION

TIME
___:___ ____ **Abdominal Evisceration**

____ Observe appropriate universal precautions.

____ Expose and examine wound.

____ Select appropriate dressing (at least 2" larger than affected area.

____ Moisten dressing with sterile 0.9% saline solution.

____ Place moistened dressing gently over wound (do not attempt to replace eviscerated contents back into abdominal cavity).

Some area protocols may call for EMT-A to skip moisten dressing.

____ Cover dressing with occlusive dressing (plastic wrap or foil).

____ Secure edges of occlusive dressing with tape.

____ Avoid heat loss from affected area.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________

EMT-A Course

Lesson 21
Skills Checklist

NORMAL EMERGENCY DELIVERY
(Optional)

____ Assess stage of labor.

____ Place mother on bed, sturdy table or ambulance stretcher (surface should be firm, put plywood in bed, soften with newspapers and sheet if too hard).

____ Position mother on back, thighs spread, knees flexed and feet flat (fold sheet or blanket under buttocks, 2 inches off surface). Two feet of table beyond buttocks. (Head should be elevated.)

____ Someone should be positioned at mother's head to reassure her (grip hand). EMT-A at right of mother if right handed (left side, if left handed).

____ Position delivery pack on table or chair close (not so close that contamination may occur).

____ Open O.B. pack.

____ Wash hands, put on sterile gloves.

____ Unfold first sterile towel, position under patient's buttock (DO NOT CONTAMINATE).

____ Place next towel on structure between patient's legs just below vaginal opening.

____ Place third towel on patient's abdomen. Drape thighs.

____ Stand to observe. Encourage relaxation between contractions (slow rhythmic breathing - in nose and out mouth decreases hyperventilation).

____ As head appears (during contraction), place right hand (right handed) on head (fingers even), exert gentle pressure. Allows head to come out slowly. Do not touch mother's skin.

____ When head is born, look and feel to make sure umbilical cord not wrapped around neck. If wrapped tightly, clamp with two clamps and then cut between clamps. If loose, carefully reposition the cord.

____ When baby is born face down, it will commonly turn to one thigh or the other. Move right hand (right handed) under head and support as rest of body delivered.

____ Pick up bulb syringe, depress and place in mouth to suction mucous and water from baby's mouth. Expel contents on towel on mother's abdomen (2-3 times).

____ As abdomen and hips are born, place other hand under that part of body as two hands holding (remember, baby is slippery).

____ Place baby on table or bed on baby's side, with head slightly lower (allows for drainage).

____ Take gauze, wipe blood mucous from baby's mouth and nose. Suction gently with bulb syringe.

____ Place baby on sterile sheet.

____ Procedure for cutting cord (if the service's medical director has determined it should be cut in the field).

  A. Clamp cord with two clamps midway between mother and baby - 3 inches apart.
  B. Using sterile scissors, cut cord between clamps.
  C. Using umbilical tape from pack, tie cord (square knot) about one inch

from clamp (leave both clamp and cord on).

D. Wrap baby in towel (keep warm), give to assistant.

____ Placenta should then be delivered (15-30 minutes). Keep intact and transport with baby and mother. Cord will be cut upon arrival at facility, if not done in field.

____ Place sterile pad over vaginal area, lower mother's legs and support together.

____ Record delivery time, transport mother, baby and placenta to hospital.

Student's Name ________________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ______________________________

EMT-A Course

Lesson 25
Skills Checklist

IMPROVED LOG ROLL

TIME
___:___ **Improved Log Roll**

____ Observe appropriate universal precautions.

____ Manual stabilization, in-line, of patient's head is provided by EMT #1.

____ EMT #2 kneels at patient's side (mid-torso) with backboard next to patient's other side.

____ Patient's arms are brought in alongside his/her body with palms touching patient's side; patient's legs are placed in anatomical position.

____ EMT #3 kneels at patient's knees on same side as EMT #2.

____ EMT #2 locks patient's elbow against the body to splint both sides of patient's body.

____ EMT #3 places his/her hand across patient in the area of the flank/buttock (on the side opposite the one they are kneeling on) in a position to assist in turning the patient's legs.

____ EMT #1 gives the command to turn the patient on "3", then directs the count.

____ As patient turns, EMT #2 moves hand splinting near-side and moves it to support torso as body turns over near side arm.

____ Board is held up against patient's back with the bottom of the board positioned at a level above the patient's knees by EMT #4.

____ EMT #1 directs all to lower patient and backboard as a unit to the ground.

____ EMT #1 directs all to assist in sliding patient up and fully on the backboard in one uniform diagonal-type motion while all grasp patient bilaterally.

____ Proper padding and side support are applied around patient's head as patient is secured to the backboard.

Student's Name ________________ Pass _____ Need More Practice _____

Instructor's Name ________________ Date ________________

EMT-A Course

Lesson 25
Skills Checklist

TRANSFERRING PATIENT FROM BED TO STRETCHER
Direct Carry, Draw Sheet, Slide Transfer

TIME

___:___ **Prepare Stretcher**
- ____ Assess patient condition.
- ____ Elevate stretcher to correct position.
- ____ Unfasten safety straps. Tuck under mattress.
- ____ Remove blankets and top sheet. Place in clean place. Correctly position pillow.

___:___ **Direct Carry Method (2-3 EMT-A's depending on size)**
- ____ Position stretcher at 90° angle to bed. Ideally, head of stretcher should be at foot of bed (lock).
- ____ Cover patient with stretcher top sheet. Remove bedding without exposing patient.
- ____ Place patient in supine position with arms folded across chest, legs together.
- ____ Stand facing the patient on patient's left side. Head EMT-A slides right arm under patient's neck cupping patient's shoulder, left hand under small of patient's back.
  Second EMT-A left hand under edge of patient's left hip (lift slightly). Right arm under patient's hips at area of sacrum (may interlock with first EMT-A).
  OPTIONAL: Third EMT-A under buttocks and legs.
- ____ At command of head end EMT-A, patient is slid toward EMT-A's until reaching the edge of bed. (Keep patient straight at all times).
- ____ Both EMT-A's bend knees, slightly stoop, curl patient toward your chest (patient now cradled in flexed arms).
- ____ Keep your backs rigid. At command of head EMT-A both return to standing position. Take one step backward to move patient parallel to stretcher.
- ____ At command, head EMT-A steps backward, foot EMT-A moves forward slowly and both walk to stretcher.
- ____ Flex knees, gently lower patient to mattress.

___:___ Modification for Transfer to Floor Level Stretcher
- ____ Stop one step from stretcher. Place left foot forward and bend right knee to floor.
- ____ Move forward and place patient gently on mattress. Back EMT-A slides arms from under patient's back and legs. Head EMT-A with left hand gently raises patient's head, slides right arm out.

___:___ **Transferring by Draw Sheet**
- ____ Cover patient with stretcher sheet and remove other top bedding.
- ____ Completely loosen bottom sheet of the bed. Roll both sides of draw sheet toward the patient.
- ____ Place stretcher (with sides of bed and stretcher lowered) parallel to and touching the side of bed.

____ Position patient supine with arms folded across his/her chest.
____ Using draw sheet, pull patient to side of bed.
____ Head positioned EMT-A leans over stretcher, slides right hand under patient's head, other grasps draw sheet. Foot positioned EMT-A slides left hand under patient's knees and grasps draw sheet, both lean against stretcher to stabilize.
____ Simultaneously, both EMT-A's draw patient into stretcher.

___:___ **Slide Transfer (Variation of Draw Sheet)**
____ Cover patient with stretcher sheet. Remove other top bedding.
____ Position patient and stretcher as in draw sheet transfer.
____ Position arms. Head EMT-A's right arm under neck/shoulders, support with left hand. Foot EMT-A's right hand under buttocks, near small of back, left hand under buttocks near thigh.
____ Both simultaneously slide the patient to stretcher with upward drawing motion.

___:___ **Ground Level Transfer to Stretcher**
____ Cover patient. Position stretcher parallel as close as possible to patient. Lock stretcher.
____ All EMT-A's who are assisting would drop to one knee and position hands, arms (as in bed to stretcher transfer).
____ Simultaneously lift the patient, keeping patient's body straight and your back straight. Move to standing position using your leg muscles.
____ At command of head EMT-A, move to stretcher and carefully place patient on center of stretcher.

___:___ **Positioning of the Patient on Stretcher**
____ Position patient on back with head on pillow, fold arms across chest.
____ Cover the patient with blanket (cuff blankets under patient). Be sure head is covered when weather necessitates.
____ Lock side rails and fasten body straps.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ___________________________

EMT-A Course

Lesson 26
Skills Checklist

HALF-BACKBOARD IMMOBILIZATION

TIME

___:___ **Half-Backboard Immobilization**

____ Observe appropriate universal precautions.

____ EMT #1 maintains cervical spinal immobilization.

____ EMT #2 completes secondary assessment including extremity neurovascular checks (pulse, cap refill, movement, sensation).

____ EMT #3 selects the proper size of C-Collar and applies it with assistance as necessary.

____ EMT #3 readies half-board (KED) for insertion into vehicle.

____ With coordination from EMT #1 and #2 (providing support for C-Spine, with #2 placing arm diagonally across patient's chest to support patient's trunk) patient is brought forward as a unit to allow room for placement of KED.

____ KED is positioned properly as patient is brought back into it as a unit, with KED positioned snugly up into patient's auxiliary areas.

____ Straps are secured according to manufacturer's recommendations, typically
  - ____ Middle torso strap
  - ____ Bottom torso strap
  - ____ Each leg strap
  - ____ Then snug the above
  - ____ Secure the head after filling space behind the head and neck with padding
    - ____ Head strap
    - ____ Chin strap
  - ____ Fasten and snug top chest strap.

Optional: Use cravats to tie over-the-clavicle straps, securing them to the lifting straps on the back of the KED

____ Reassess patient's neurovascular status.

Student's Name ______________________ Pass _____ Need More Practice _____

Instructor's Name ______________________ Date ______________________

EMT-A Course

Lesson 26
Skills Checklist

RAPID EXTRICATION

Scenario: Patient is sitting in car seat (or chair if car is not available). Students are told that the patient has been assessed and is critical.

Equipment: 1 live model
1 automobile (ideal) or 4 armless chairs
1 Philadelphia collar
1 long backboard

TIME
___:___ **Rapid Extrication**

____ EMT #1 takes in-line support from behind patient ("back seat"), and collar is applied.

____ EMT #2 approaches patient from passenger seat. EMT #3 positions backboard on seat from driver's side of car (outside).

____ EMT #4 assumes manual in-line support from the side (as if reaching in through open car door) and must provide support of thorax. A cross-chest shoulder "hug" works well.

____ EMT #2 places hands under patient's knees and with EMT #4 rotates patient's back toward open door until feet strike side of car seat.

____ EMT #4 lowers patient's torso to board as EMT #2 raises patient's legs.

____ Patient is pulled halfway along backboard.

____ EMTs adjust position (without release manual support). Pull patient completely onto board.

____ Instructor then verbalizes that board would be carried to waiting ambulance cot and patient would be immobilized on backboard.

Student's Name ________________ Pass _____ Need More Practice _____

Instructor's Name ________________ Date ________________

EMT-A Course

Lesson 26
Skills Checklist

SPINAL STABILIZATION AND HELMET REMOVAL

Equipment:
1 long backboard
4 straps (or 12 cravats)
3 rigid cervical collars (various adult sizes)
1 head immobilization device or equivalent (adult)
1 heavy blanket
3 cravats
1 roll of two-inch tape
1 helmet (football, motorcycle, etc.)
1 victim (adult)

TIME
___:___ Spinal Stabilization and Helmet Removal

____ Immobilize a patient's cervical spine in the in-line neutral position.

____ Measure and patient for a rigid cervical collar of appropriate size and apply it to a simulated trauma patient.

____ Rapidly immobilize a simulated trauma patient onto a long backboard in the standing position and bring that patient safely to a supine position.

____ Perform an "improved logroll" of a simulated trauma patient onto a long backboard.

____ Remove a helmet from a simulated trauma patient with a suspected cervical spine injury.

Student's Name ____________________ Pass ____ Need More Practice ____

Instructor's Name ____________________ Date ____________________

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EMT-A Course

Lesson 26
Skills Checklist

LONG BACKBOARD APPLICATION ON AN UNSTABLE STANDING PATIENT

Scenario: The patient is found standing upright and complains of neck pain, headache and lightheadedness. The patient had been walking and was struck by a bicycle. Upon examination, no further injuries are found. The patient does not know if he lost consciousness at any time during the incident but complains of feeling extremely faint before the end of the examination.

TIME
___:___ **Long Backboard Application on an Unstable Standing Patient**

____ Upon learning of the patient's primary complaint of neck pain, EMT #1 takes manual support of the head and immobilizes the patient's cervical spine in a neutral in-line position. The student explains the procedure to the patient as stabilization is provided.
If the student is standing in front of the patient, immobilization should be obtained immediately by placement of the hands on both sides of the patient's mandible with support of the head.

____ EMT #2 measures the patient's neck and applies an appropriate If stabilization has been initiated from the anterior position, EMT #2 takes stabilization from EMT #1 following placement of the collar.

____ EMT #3 angles the long backboard behind the patient without causing loss of manual in-line stabilization.

____ EMTs #1 and #3 now position themselves on either side of the patient facing toward EMT #2. They take the long backboard hand hold closest to the patient's axilla, using their nearest (to the patient) hands.

____ EMTs #1 and #3 place their other (outside) hands on the patient's shoulders. This hand placement must restrain any superior movement while, at the same time, hold the patient firmly to the board.

____ Upon determining that everyone on the team is ready and on command from EMT #2, the long backboard is lowered to the floor.
    ____ The weight of the long backboard and patient is supported by EMTs #1 and #3 with their inside arms while the patient is held to the board by their outside arms. EMTs #1 and #3 must take a step forward while the board is being lowered to compensate for the arc of the board as it is pivoted downward.

- ____ The EMT #2 is posterior to the patient, the hands must be rotated halfway through the lowering of the board.
- ____ EMT #2 must take a step backward at the same time while rotating the hands on the patient's head to maintain stabilization. This maneuver is the same as maintaining stabilization in the rapid takedown procedure.
- ____ If available, a fourth person can be utilized to foot the bottom of the long backboard providing greater stability during the move to the ground

____ Students will then complete all necessary evaluation, treatment and immobilization.

____ A fully immobilized adult manikin is provided for demonstration. The instructor reviews the process and rationale for full immobilization.

- ____ The torso and head are immobilized to the board in that order.
- ____ The board is lowered, and adjustment of the immobilization is done if necessary.

Student's Name ____________________ Pass ____ Need More Practice ____

Instructor's Name ____________________ Date ____________________

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EMT-A Course

Lesson 26
Skills Checklist

"IMPROVED LOG ROLL" TO BACKBOARD

Scenario: The patient is on his back on the ground in the position in which he fell. The primary survey has been completed. The patient is not critical, and there is the potential for a spinal cord injury.

TIME
___:___ **"Improved Log Roll" to Backboard**

____ EMT #1 (at head) will provide manual in-line cervical stabilization. A proper rigid cervical collar is applied. EMT #2 will place the long backboard next to the patient. EMT #3 kneels at the patient's mid-thorax position on opposite side from board and moves the patient's limbs into in-line anatomical position while checking for injuries.

____ EMT #2 will kneel at the patient's upper legs on the side opposite from board. EMT #3 (at chest) will make sure that the patient's arm which is closest to the student is free of injury.

____ EMT #2 (at legs) will gather the patient's slacks (or hold legs) in hand closest to patient's feet. He/she will place other hand (arm across patient's lower abdomen) around patient and partly under the buttock.

____ EMT #3 will hold the patient's arms tightly against the patient's body with patient's palms against patient's body and with the elbows "locked." With each hand he/she will press each of the patient's elbows toward the patient's midline. With the fingers that surround the far arm, he/she will also get a grip on the patient's clothing. PATIENT IS NOW READY TO BE ROLLED.

____ EMT #1 will give the commands for movement. Patient is rolled toward the EMTs until on the side. During the roll, the head and legs must be kept in a neutral position. (NOTE: As the patient's weight shifts, EMT #3 should withdraw his/her hand from under the patient and use that hand to help with the roll). EMTs will place the board next to the patient's back or alongside him on the ground.

____ EMTs will roll the patient onto the long backboard, and the board is lowered to the ground.

Comment: Instructor should ask students to rate how well the patient moved as a single unit. Point out that this method is suggested if a spine non-boarded patient begins to vomit.

Student's Name ______________________ Pass _____ Need More Practice _____
Instructor's Name ____________________ Date ______________________
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EMT-A Course

Lesson 26
Skills Checklist

HELMET REMOVAL

Scenario: The victim has a possible cervical spine injury indicated from the mechanism of injury (motorcycle, football, etc.). He is wearing a helmet. No significant findings are present, and the patient is supine.

TIME
___:___ **Helmet Removal**

____ EMT #1 will immobilize the helmet with manual in-line stabilization from above the patient's head.

____ EMT #2 will remove the chin strap, face piece, nose guards, etc., while maintaining stabilization.

____ EMT #2 will then place one hand on the patient's mandible with the thumb on one side and the long and index fingers on the opposite side. The other hand will be placed behind the patient's neck, and pressure is applied to the occipital region. This maneuver transfers support of the head from EMT #1 to the EMT #2.

____ EMT #1 will spread the helmet and rotate it off anteriorly to the anatomy of the head.

____ EMT #1 will then retake manual immobilization and support from above the patient's head keeping the head in a neutral in-line position.

____ EMT #2 will apply an appropriate rigid cervical collar.

____ EMT #2 will pad under the head as necessary to maintain a neutral in-line position.

Student's Name ____________________ Pass _____ Need More Practice _____

Instructor's Name ____________________ Date ____________________

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APPENDIX B

☐☐

Date of Run |__|__|__| mo day yr

IOWA PREHOSPITAL CARE REPORT

341-0128

Medical Record # ____________

Service Name ____________ Service # |__|__|__|__| Vehicle # ________ Dispatch # ________

Service Level 01 FR / 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other Trauma Patient ID # |__|__|__|__|

PATIENT INFORMATION

ast Name First MI

ome Address Street/RFD

City State Zip

Age ______ DOB |__|__|__| mo day yr Sex: M F

Physician(s)

Insurance

VITAL SIGNS

	A	Respiratory		B		Pulse			C	D	Glasgow Scale				E	Trauma Score =
Time	Rate		Effort	Rate	Qual	B/P			Cap Ref	④ Eye	⑤ Ver	⑥ Mot	⑮ Tot		A + B + C + D + E
			1 Nor 0 Abn 0 Abs			0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs			0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs			0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						

Lung Sounds ____________

Skin Color/Temp/Moist ____________

Pupils ____________

PAST MED HISTORY ____________ **MEDIC ALERT** Y N

CURRENT MEDS ____________ **ALLERGIES** ____________

Time **NARRATIVE**

SIGNS & SYMPTOMS

Reported Time of Onset	0-5 Min	6-30 Min	31-59 Min	1-12 Hrs	>12 Hrs	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
Fainting	A	B	C	D	E	F	G
Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

- 01 Allergic Reaction
- 02 Behavioral/OD
- 03 Cancer
- 04 Cardiac
- 05 Cardio/Resp
- 06 Diabetes
- 07 Exposure—Cold
- 08 Exposure—Heat
- 09 GI/GU
- 10 Neonate
- 11 Neuro/Seizure
- 12 OB/GYN
- 13 Poison
- 14 Respiratory
- 15 Trauma
- 16 Vascular/Stroke
- 99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
07 Back/Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

- 01 Assault/Batt
- 02 Bicycle
- 03 Chemical
- 04 Electrical
- 05 Fall
- 06 Fire/Explos
- 07 Gun/Knife
- 08 Moped
- 09 Motor Veh
- 10 Motorcycle
- 11 Rail/Air
- 12 Sports/Rec
- 13 Veh/Ped
- 14 Water Acc
- 99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out		→			A B C D
At Scene		→	Y N	Y N	A B C D
Dep Scene		→			A B C D
At Dest		→	Y N	Y N	A B C D
In Serv			Scheduled Run		A Critical C Minor
At Base			Y N		B Moderate D DOA

MILEAGE

Ending |__|__|__|__| |__|

Beginning |__|__|__|__| |__|

Run Total |__|__|__| |__|

To Scene |__|__| To Dest |__|__|

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

- 01 Airway Cleared
- 02 Airway Adjunct ____________ type
- 03 Bleed Control ____________ method
- 04 Cervical Collar
- 05 Cold Applied
- 06 CPR (time began) ____________
- 07 Dressing Applied
- 08 Elevation ____________
- 09 Heat Applied
- 10 Irrigation ____________
- 11 MAST Applied
- 12 MAST Inflated ____________ time
- 13 OB Assist
- 14 O₂ ______ LPM via ____________
- 15 Poison TX ____________ type
- 16 Psychological Support
- 17 Restraints Used
- 18 Scoop Stretcher
- Spineboard-Long
- Spineboard-Short
- Splint ____________
- Other ____________ type
- 00 Transport Only/No TX

LOCATION County No ____ —

- A Interstate
- B US/St Hwy
- C Co Road
- D Street
- E Farm
- F Residence
- G Public Bldg
- H Hospital # |__|__|__|
- J Nursing Home # |__|__|__|
- K Dr Off/Clinic # |__|__|__|
- L Recreation
- Z Other

DISPOSITION County No ____ —

- A Hospital # |__|__|__|
- B Nursing Home # |__|__|__|
- C Dr Off/Clinic # |__|__|__|
- D Ambulance # |__|__|__|__|
- Pt Released to ____________
- E Residence
- F Refused Transport
- Z Other

Aid Requested By:

- 01 Citizen
- 02 Dispatcher
- 03 Family
- 04 Fire Dept
- 05 Law Enforcement
- 06 Med Personnel
- 07 Patient
- 88 Unknown
- 99 Other

Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?

	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver ____________ ________

Attendant ____________ ________

Attendant ____________ ________

Attendant ____________ ________

Report Completed By ____________ ________

Report Completed On |__|__|__| mo day yr |____| time

488051

☐ Check if ALS was provided

BEST COPY AVAILABLE

ORIGINAL

358

☐☐

IOWA PREHOSPITAL CARE REPORT

241-0128

Date of Run |__|__|__| mo. day yr

Medical Record # ______

Service Name ______ Service # |__|__|__| Vehicle # ______ Dispatch # ______

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other

Trauma Patient ID # |__|__|__|

PATIENT INFORMATION

ast Name ______ First ______ MI

ome Address ______ Street/RFD

City ______ State ______ Zip

Age ______ DOB |__|__|__| mo day yr Sex M F

Physician(s)

Insurance

VITAL SIGNS A B C D E

	Respiratory			Pulse				Glasgow Scale					Trauma Score = A+B+C+D+E
Time	Rate		Effort	Rate	Qual	B/P	Cap Ref	④ Eye	⑤ Ver	⑥ Mot	⑮ Tot		
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/	2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/	2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/	2 Nor 1 Del 0 Abs						

Lung Sounds ______

Skin Color/Temp/Moist ______

Pupils ______

PAST MED HISTORY ______ **MEDIC ALERT** Y N

CURRENT MEDS ______ **ALLERGIES** ______

Time	NARRATIVE

SIGNS & SYMPTOMS

Reported Time of Onset	Min 0-5	6-30	31-59	Hrs 1-12	>12	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
Fainting	A	B	C	D	E	F	G
Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

- 01 Allergic Reaction
- 02 Behavioral/OD
- 03 Cancer
- 04 Cardiac
- 05 Cardio/Resp
- 06 Diabetes
- 07 Exposure—Cold
- 08 Exposure—Heat
- 09 GI/GU
- 10 Neonate
- 11 Neuro/Seizure
- 12 OB/GYN
- 13 Poison
- 14 Respiratory
- 15 Trauma
- 16 Vascular/Stroke
- 99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
07 Back/Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

- 01 Assault/Batt
- 02 Bicycle
- 03 Chemical
- 04 Electrical
- 05 Fall
- 06 Fire/Explos
- 07 Gun/Knife
- 08 Moped
- 09 Motor Veh
- 10 Motorcycle
- 11 Rail/Air
- 12 Sports/Rec
- 13 Veh/Ped
- 14 Water Acc
- 99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out		→			A B C D
At Scene		→	Y N	Y N	A B C D
Dep Scene		→			A B C D
At Dest		→	Y N	Y N	A B C D
In Serv			Scheduled Run		A Critical C Minor
At Base			Y N		B Moderate D DOA

MILEAGE

Ending |__|__|__|.|__|

Beginning |__|__|__|.|__|

Run Total |__|__|__|.|__|

To Scene |__|__| To Dest |__|__|

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

- 01 Airway Cleared
- 02 Airway Adjunct ______ type
- 03 Bleed Control
- 04 Cervical Collar ______ method
- 05 Cold Applied
- 06 CPR (time began)
- 07 Dressing Applied
- 08 Elevation
- 09 Heat Applied
- 10 Irrigation
- 11 MAST Applied
- 12 MAST inflated ______ time
- 13 OB Assist
- 14 O_2 ______ LPM via
- 15 Poison TX ______ type
- 16 Psychological Support
- 17 Restraints Used
- 18 Scoop Stretcher
- Spineboard-Long
- Spineboard-Short
- Splint
- 99 Other ______ type
- 00 Transport Only/No TX

LOCATION County No ______ —

- A Interstate
- B US/St Hwy
- C Co Road
- D Street
- E Farm
- F Residence
- G Public Bldg
- H Hospital # |__|__|__|
- J Nursing Home # |__|__|__|
- K Dr Off/Clinic # |__|__|__|
- L Recreation
- Z Other

DISPOSITION County No ______ —

- A Hospital # |__|__|__|
- B Nursing Home # |__|__|__|
- C Dr Off/Clinic # |__|__|__|
- D Ambulance # |__|__|__|__|
- Pt Released to ______
- E Residence
- F Refused Transport
- Z Other

Aid Requested By:

- 01 Citizen
- 02 Dispatcher
- 03 Family
- 04 Fire Dept
- 05 Law Enforcement
- 06 Med Personnel
- 07 Patient
- 88 Unknown
- 99 Other

Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?

	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver ______ ______

Attendant ______ ______

Attendant ______ ______

Attendant ______ ______

Report Completed By ______ ______

Report Completed On |__|__|__| mo day yr |__|__| time

488051

☐ Check if ALS was provided

ORIGINAL

359

☐☐

IOWA PREHOSPITAL CARE REPORT

241-0128

Date of Run mo day yr

Medical Record #

Service Name

Service #

Vehicle #

Dispatch #

Trauma Patient ID #

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other

PATIENT INFORMATION

Last Name First MI

Home Address Street/RFD

City State Zip

Age DOB mo day yr Sex M F

Physician(s)

Insurance

VITAL SIGNS

Time	Respiratory A Rate		Respiratory B Effort	Pulse Rate	Pulse Qual	B/P	C	D Cap Ref	Glasgow Scale ④ Eye	⑤ Ver	⑥ Mot	⑮ Tot	E	Trauma Score = A+B+C+D+E
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						

Lung Sounds

Skin Color/Temp/Moist

Pupils

MEDIC ALERT Y N

PAST MED HISTORY

CURRENT MEDS

ALLERGIES

Time NARRATIVE

SIGNS & SYMPTOMS

Reported Time of Onset	Min. 0-5	6-30	31-59	Hrs. 1-12	> 12	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
Fainting	A	B	C	D	E	F	G
Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

01 Allergic Reaction
02 Behavioral/OD
03 Cancer
04 Cardiac
05 Cardio/Resp
06 Diabetes
07 Exposure—Cold
08 Exposure—Heat
09 GI/GU
10 Neonate
11 Neuro/Seizure
12 OB/GYN
13 Poison
14 Respiratory
15 Trauma
16 Vascular/Stroke
99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
07 Back/Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

01 Assault/Batt
02 Bicycle
03 Chemical
04 Electrical
05 Fall
06 Fire/Explos
07 Gun/Knife
08 Moped
09 Motor Veh
10 Motorcycle
11 Rail/Air
12 Sports/Rec
13 Veh/Ped
14 Water Acc
99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out					A B C D
At Scene			Y N	Y N	A B C D
Dep Scene					A B C D
At Dest			Y N	Y N	A B C D
In Serv			Scheduled Run Y N		A Critical C Minor B Moderate D DOA
At Base					

MILEAGE

Ending
Beginning
Run Total
To Scene To Dest

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

01 Airway Cleared
02 Airway Adjunct type
03 Bleed Control method
04 Cervical Collar
05 Cold Applied
06 CPR (time began)
07 Dressing Applied
08 Elevation
09 Heat Applied
10 Irrigation
11 MAST Applied
12 MAST Inflated time
13 OB Assist
14 O_2 LPM via
15 Poison TX type
16 Psychological Support
17 Restraints Used
18 Scoop Stretcher
Spineboard-Long
Spineboard-Short
Splint type
Other
00 Transport Only/No TX

LOCATION County No —

A Interstate
B US/St Hwy
C Co Road
D Street
E Farm
F Residence
G Public Bldg
H Hospital #
J Nursing Home #
K Dr Off/Clinic #
L Recreation
Z Other

DISPOSITION County No —

A Hospital #
B Nursing Home #
C Dr Off/Clinic #
D Ambulance #
Pt Released to
E Residence
F Refused Transport
Z Other

Aid Requested By:

01 Citizen
02 Dispatcher
03 Family
04 Fire Dept
05 Law Enforcement
06 Med Personnel
07 Patient
88 Unknown
99 Other

Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver

Attendant

Attendant

Attendant

Report Completed By

Report Completed On mo day yr time

☐ Check if ALS was provided

488051

ORIGINAL

360

IOWA PREHOSPITAL CARE REPORT

241-0128

Date of Run ⌊ mo ⌊ day ⌊ yr ⌋

Medical Record # ____

Service Name ____ Service # ⌊ ⌊ ⌊ ⌋ Vehicle # ____ Dispatch # ____

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other Trauma Patient ID # ⌊ ⌊ ⌊ ⌋

PATIENT INFORMATION

Last Name First MI

Home Address Street/RFD

City State Zip

Age ____ DOB ⌊ mo ⌊ day ⌊ yr ⌋ Sex M F

Physician(s)

Insurance

VITAL SIGNS

	A		B				C	D	Glasgow Scale				E	Trauma Score =
	Respiratory			Pulse					④	⑤	⑥	⑮		
Time	Rate		Effort	Rate	Qual	B/P		Cap Ref	Eye	Ver	Mot	Tot		A + B + C + D + E
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs						

Lung Sounds ____

Skin Color/Temp/Moist ____

Pupils ____

PAST MED HISTORY ____ **MEDIC ALERT** Y N

CURRENT MEDS ____ **ALLERGIES** ____

Time	NARRATIVE

SIGNS & SYMPTOMS

	Min			Hrs			
Reported Time of Onset:	0-5	6-30	31-59	1-12	>12	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
08 Dyspnea	A	B	C	D	E	F	G
09 Fainting	A	B	C	D	E	F	G
10 Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

01 Allergic Reaction
02 Behavioral/OD
03 Cancer
04 Cardiac
05 Cardio/Resp
06 Diabetes
07 Exposure—Cold
08 Exposure—Heat
09 GI/GU
10 Neonate
11 Neuro/Seizure
12 OB/GYN
13 Poison
14 Respiratory
15 Trauma
16 Vascular/Stroke
99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
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08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

01 Assault/Batt
02 Bicycle
03 Chemical
04 Electrical
05 Fall
06 Fire/Explos
07 Gun/Knife
08 Moped
09 Motor Veh
10 Motorcycle
11 Rail/Air
12 Sports/Rec
13 Veh/Ped
14 Water Acc
99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out					A B C D
At Scene			Y N	Y N	A B C D
Dep Scene					A B C D
At Dest			Y N	Y N	A B C D
In Serv			Scheduled Run		A Critical C Minor
At Base			Y N		B Moderate D DOA

MILEAGE

Ending ⌊ ⌊ ⌊ ⌋ ⌊ ⌋
Beginning ⌊ ⌊ ⌊ ⌋ ⌊ ⌋
Run Total ⌊ ⌊ ⌊ ⌋ ⌊ ⌋
To Scene ⌊ ⌊ ⌋ To Dest ⌊ ⌊ ⌋

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

01 Airway Cleared
02 Airway Adjunct ____ type
03 Bleed Control ____ method
04 Cervical Collar
05 Cold Applied
06 CPR (time began) ____
07 Dressing Applied
08 Elevation ____
09 Heat Applied
10 Irrigation ____
11 MAST Applied
12 MAST Inflated ____ time
13 OB Assist
14 O₂ ____ LPM via ____ type
15 Poison TX
16 Psychological Support
17 Restraints Used
18 Scoop Stretcher
19 Spineboard-Long
20 Spineboard-Short
21 Splint ____ type
99 Other
00 Transport Only/No TX

LOCATION County No ____ —

A Interstate
B US/St Hwy
C Co Road
D Street
E Farm
F Residence
G Public Bldg
H Hospital # ⌊ ⌊ ⌋
J Nursing Home # ⌊ ⌊ ⌋
K Dr Off/Clinic # ⌊ ⌊ ⌋
L Recreation
Z Other

DISPOSITION County No ____ —

A Hospital # ⌊ ⌊ ⌋
B Nursing Home # ⌊ ⌊ ⌋
C Dr Off/Clinic # ⌊ ⌊ ⌋
D Ambulance # ⌊ ⌊ ⌋
Pt Released to ____
E Residence
F Refused Transport
Z Other

Aid Requested By:

01 Citizen
02 Dispatcher
03 Family
04 Fire Dept
05 Law Enforcement
06 Med Personnel
07 Patient
88 Unknown
99 Other

Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?

	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver ____ ____
Attendant ____ ____
Attendant ____ ____
Attendant ____ ____
Report Completed By ____ ____
Report Completed On ⌊ mo ⌊ day ⌊ yr ⌋ ⌊ time ⌋

488051

ORIGINAL 361

☐ Check if ALS was provided

☐☐

IOWA PREHOSPITAL CARE REPORT

241-0128

Date of Run |_|_|_|_|_|_| mo day yr

Medical Record # ____________

Service Name ____________ Service # |_|_|_|_|_|_| Vehicle # ____________ Dispatch # ____________

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other Trauma Patient ID # |_|_|_|_|_|

PATIENT INFORMATION

ast Name ____________ First ____________ MI ____

me Address ____________ Street/RFD ____________

ity ____________ State ____ Zip ____

Age ______ DOB |_|_|_|_|_|_| mo day yr Sex M F

Physician(s) ____________

Insurance ____________

VITAL SIGNS

		A		B				C	D					E	
		Respiratory			Pulse					Glasgow Scale					Trauma Score = A+B+C+D+E
Time	Rate		Effort	Rate	Qual	B/P			Cap Ref	④ Eye	⑤ Ver	⑥ Mot	⑮ Tot		
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/			2 Nor 1 Del 0 Abs						

Lung Sounds ____________

Skin Color/Temp/Moist ____________

Pupils ____________

MEDIC ALERT Y N

PAST MED HISTORY ____________

CURRENT MEDS ____________ **ALLERGIES** ____________

Time	NARRATIVE

SIGNS & SYMPTOMS

Reported Time of Onset	Min 0-5	6-30	31-59	Hrs 1-12	> 12	Unknown	With Pt
01 Alcohol Odor	A	B	C	D	E	F	G
02 Behavioral	A	B	C	D	E	F	G
03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
ainting	A	B	C	D	E	F	G
Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

01 Allergic Reaction
02 Behavioral/OD
03 Cancer
04 Cardiac
05 Cardio/Resp
06 Diabetes
07 Exposure—Cold
08 Exposure—Heat
09 GI/GU
10 Neonate
11 Neuro/Seizure
12 OB/GYN
13 Poison
14 Respiratory
15 Trauma
16 Vascular/Stroke
99 Other

ASSESSED INJURY

	Abrasion	Amputation	Burn	Cold	Contusion	Crushing	Dislocation	Foreign Body	Fracture	Gunshot	Internal	Laceration	Puncture	Sprain/Strain	Other
01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
02 Face/Eye	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
07 Back/Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

01 Assault/Batt
02 Bicycle
03 Chemical
04 Electrical
05 Fall
06 Fire/Explos
07 Gun/Knife
08 Moped
09 Motor Veh
10 Motorcycle
11 Rail/Air
12 Sports/Rec
13 Veh/Ped
14 Water Acc
99 Other

TIME	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					A B C D
Time Out			Y N	Y N	A B C D
At Scene					A B C D
Dep Scene			Y N	Y N	A B C D
At Dest			Scheduled Run		A Critical C Minor
In Serv			Y N		B Moderate D DOA
At Base					

MILEAGE

Ending |_|_|_|_|_|_| |_|
Beginning |_|_|_|_|_|_| |_|
Run Total |_|_|_|_|_| |_|
To Scene |_|_|_| To Dest |_|_|_|

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

01 Airway Cleared
02 Airway Adjunct ____________ type
03 Bleed Control ____________ method
04 Cervical Collar
05 Cold Applied
06 CPR (time began) ____________
07 Dressing Applied
08 Elevation ____________
09 Heat Applied
10 Irrigation ____________
11 MAST Applied
12 MAST Inflated ____________ time
13 OB Assist
14 O_2 LPM via
15 Poison TX ____________ type
16 Psychological Support
17 Restraints Used
18 Scoop Stretcher
pineboard-Long
pineboard-Short
Splint ____________ type
9 Other
00 Transport Only/No TX

LOCATION County No ____ — ____

A Interstate
B US/St Hwy
C Co Road
D Street
E Farm
F Residence
G Public Bldg
H Hospital # |_|_|_|
J Nursing Home # |_|_|_|
K Dr Off/Clinic # |_|_|_|
L Recreation
Z Other

DISPOSITION County No ____ — ____

A Hospital # |_|_|_|
B Nursing Home # |_|_|_|
C Dr Off/Clinic # |_|_|_|
D Ambulance # |_|_|_|_|
E Residence
F Refused Transport
Z Other
Pt Released to ____________

Aid Requested By:

01 Citizen
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03 Family
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05 Law Enforcement
06 Med Personnel
07 Patient
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Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?

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01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver ____________ ____________
Attendant ____________ ____________
Attendant ____________ ____________
Attendant ____________ ____________
Report Completed By ____________ ____________
Report Completed On |_|_|_|_|_|_| mo day yr |_|_|_|_| time

☐ Check if ALS was provided

488051

ORIGINAL 362

☐☐

IOWA PREHOSPITAL CARE REPORT

241-012B

Date of Run |__|__|__| mo day yr

Medical Record # ____________

Service Name ____________ Service # |__|__|__|__| Vehicle # ________ Dispatch # ________

Service Level 01 FR 02 EMT-A 03 EMT-D 04 EMT-I 05 EMT-ID 06 EMT-II 07 EMT-P 99 Other

Trauma Patient ID # |__|__|__|__|

PATIENT INFORMATION

Last Name ________ First ________ MI

Home Address ________ Street/RFD ________

City ________ State ________ Zip

Age ______ DOB |__|__|__| mo day yr Sex: M F

Physician(s) ____________

Insurance ____________

VITAL SIGNS

		A	B				C	D	E				
	Respiratory			Pulse					Glasgow Scale				Trauma Score = A+B+C+D+E
Time	Rate		Effort	Rate	Qual	B/P		Cap Ref	④ Eye	⑤ Ver	⑥ Mot	⑮ Tot	
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs					
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs					
			1 Nor 0 Abn 0 Abs		0 Reg 0 Irr	/		2 Nor 1 Del 0 Abs					

Lung Sounds ____________

Skin Color/Temp/Moist ____________

Pupils ____________

PAST MED HISTORY ____________ **MEDIC ALERT** Y N

CURRENT MEDS ____________ **ALLERGIES** ____________

Time	NARRATIVE

SIGNS & SYMPTOMS

Reported Time of Onset:	Min 0-5	Min 6-30	Min 31-59	Hrs 1-12	Hrs > 12	Unknown	With Pt
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03 Bleeding	A	B	C	D	E	F	G
04 Cardiac Arrest	A	B	C	D	E	F	G
05 Convulsion	A	B	C	D	E	F	G
06 Diaphoretic	A	B	C	D	E	F	G
07 Dizziness	A	B	C	D	E	F	G
Dyspnea	A	B	C	D	E	F	G
Fainting	A	B	C	D	E	F	G
Fever	A	B	C	D	E	F	G
11 Nausea	A	B	C	D	E	F	G
12 Non Ambulatory	A	B	C	D	E	F	G
13 Numb/Tingling	A	B	C	D	E	F	G
14 Pain	A	B	C	D	E	F	G
15 Paralysis	A	B	C	D	E	F	G
16 Resp. Arrest	A	B	C	D	E	F	G
17 Shock	A	B	C	D	E	F	G
18 Vomiting	A	B	C	D	E	F	G
99 Other	A	B	C	D	E	F	G

ASSESSED CONDITION

01 Allergic Reaction
02 Behavioral/OD
03 Cancer
04 Cardiac
05 Cardio/Resp
06 Diabetes
07 Exposure—Cold
08 Exposure—Heat
09 GI/GU
10 Neonate
11 Neuro/Seizure
12 OB/GYN
13 Poison
14 Respiratory
15 Trauma
16 Vascular/Stroke
99 Other

ASSESSED INJURY

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01 Head	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
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03 Neck / C Spine	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
04 Chest	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
05 Abdomen	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
06 Pelvis/Hip	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
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08 Upper Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z
09 Lower Extremity	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Z

CAUSE OF INJURY

01 Assault/Batt
02 Bicycle
03 Chemical
04 Electrical
05 Fall
06 Fire/Explos
07 Gun/Knife
08 Moped
09 Motor Veh
10 Motorcycle
11 Rail/Air
12 Sports/Rec
13 Veh/Ped
14 Water Acc
99 Other

TIME

	Time	#Minutes	Lights	Siren	Case Severity
Serv Noti					
Time Out					A B C D
At Scene			Y N	Y N	A B C D
Dep Scene					A B C D
At Dest			Y N	Y N	A B C D
In Serv					
At Base			Scheduled Run Y N		A Critical C Minor B Moderate D DOA

MILEAGE

Ending |__|__|__|__| |__|
Beginning |__|__|__|__| |__|
Run Total |__|__|__| |__|
To Scene |__|__| To Dest |__|__|

Pt Used Seatbelt	Y	N	U	N/A
Pt Used Helmet	Y	N	U	N/A
Extrication Req	Y	N	U	N/A

TREATMENT (TX)

01 Airway Cleared
02 Airway Adjunct ________ type
03 Bleed Control ________ method
04 Cervical Collar
05 Cold Applied
06 CPR (time began) ________
07 Dressing Applied
08 Elevation
09 Heat Applied
10 Irrigation
11 MAST Applied
12 MAST Inflated ________ time
13 OB Assist
14 O₂ ______ LPM via ________ type
15 Poison TX
16 Psychological Support
17 Restraints Used
18 Scoop Stretcher
Spineboard-Long
Spineboard-Short
1 Splint ________ type
99 Other
00 Transport Only/No TX

LOCATION County No ______ —

A Interstate
B US/St Hwy
C Co Road
D Street
E Farm
F Residence
G Public Bldg
H Hospital # |__|__|__|
J Nursing Home # |__|__|__|
K Dr Off/Clinic # |__|__|__|
L Recreation
Z Other

DISPOSITION County No ______ —

A Hospital # |__|__|__|
B Nursing Home # |__|__|__|
C Dr Off/Clinic # |__|__|__|
D Ambulance # |__|__|__|
Pt Released to ____________
E Residence
F Refused Transport
Z Other

Aid Requested By:

01 Citizen
02 Dispatcher
03 Family
04 Fire Dept
05 Law Enforcement
06 Med Personnel
07 Patient
88 Unknown
99 Other

Hospital Decided By: A Patient B Family C Physician D Location E Medical Direction F Service G Trauma Criteria Z Other

Aid Provided By Others?

	Y	N	TX Number
01 Citizen			
02 Fire			
03 FR			
04 Law Enf			
05 Med Pers			

PERSONNEL Title/Cert #

Driver ____________ ________
Attendant ____________ ________
Attendant ____________ ________
Attendant ____________ ________

Report Completed By ____________

Report Completed On |__|__|__| mo day yr |__|__|__| time

488051

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☐ Check if ALS was provided

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APPENDIX C

CDC

REQUIREMENTS

Appendix C
In-hospital Clinical Guidelines

Basic Emergency Medical Technician: National Standard Curriculum In-Hospital Clinical Guidelines

Note: All of the following are to be carried out under the supervision of a Registered Nurse on that unit or the patient's physician in accordance with hospital policy.

I. Tour the Emergency Room, Intensive Care Unit, Operating Room, and Maternity Unit. Obtain and record at least one set of vital signs in each of the above named areas of the hospital.

Vital signs include: Blood pressure.
Pulse.
Respirations.
Temperature.

II. The following can be completed under supervision when the opportunity presents itself.

A. Obtain and record neurological signs (level of consciousness, pupil reaction to light, grip).

B. Observe an intravenous line being started and see how it is secured in place.

C. Observe the administration of an injection.

D. Administer oxygen to a patient.

E. Accompany a patient to a specific procedure (example: X-ray, physical therapy, etc.)

III. The following objectives are for the specific units indicated.

A. Emergency Room (P.M. shift recommended)

1. Observe the unloading procedure of a patient from an ambulance.
2. Observe the care given to a patient with chest pain.
3. Observe and participate in the cleansing and bandaging of wounds.
4. Observe and participate in the application of a cast.
5. Observe and participate in techniques used in transferring a patient from an ambulance cot to an Emergency Room cart.
6. Accompany an Emergency Room staff member in transporting a patient to his room for admission to the hospital.
7. Observe the care given to a patient in one of the following types of shock:
    a. Hypovolemic.
    b. Respiratory.
    c. Cardiogenic.
    d. Psychogenic.
    e. Neurogenic.
    f. Metabolic
    g. Septic.
8. Interact with patient and relatives and friends of the patient brought into the Emergency Room. Observe their behavior in the situation.
9. Observe the history-taking techniques of an Emergency Room patient by a Registered Nurse twice and follow through by initiating the history taking the third time, under supervision.
10. Observe and participate in the proper technique of physical assessment.

B. Operating Room.

1. Observe at the surgeon's discretion, in at least one surgical.
2. Observe the implementation of the sterile technique.

C. Maternity Unit.

1. Labor Room—Time the duration of a contraction.
2. Labor Room—Listen to the fetal heart tones before, during and after a contraction.
3. Observe one complete delivery, including post-partum care of the mother.
4. Observe the procedures of suctioning of the newborn.

5. Observe the care of the umbilical cord.
6. Observe and participate in the proper technique of a physical assessment of the newborn.

D. Intensive Care

1. Observe and participate in maintenance of the airway.
2. Observe and participate in assessing patients for:
    - a. Heart sounds.
    - b. Breath sounds.
    - c. Shock.
    - d. Signs of heart failure.
    - e. Abdominal problems.
    - f. Full bladder.
3. Observe and participate in the admission of a patient.
4. Observe and ask questions as to the interpretation of the heart monitor.
5. Interact with the patient and the relatives and friends of the patient.

***Note:** In situations where these activities are not achievable in a reasonable period of time, programmed patient simulations or other activities may be used to ensure student competency.

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APPENDIX D

IOWA EMS

ROLE OF

EMS PROVIDER

IOWA

EMERGENCY MEDICAL SERVICES

ROLES & RESPONSIBILITIES OF THE EMS PROVIDER

Iowa Department of Public Health
Emergency Medical Services
Lucas State Office Building
Des Moines, Iowa 50319-0075
515/281-3741

Terry E. Branstad
Governor

Christopher G. Atchison
Director of Public Health

ROLES AND RESPONSIBILITIES OF THE EMS PROVIDER

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Duty to Act -2-

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Standard of Care -3-

Negligence -3-

Confidentiality -4-

Documentation -4-

Consent -4-

Refusal of Care -4-

Choice of Destination -5-

Iowa Statutes of Limitation -5-

Good Samaritan Law -5-

Life Sustaining Procedures -6-

AIDS -7-

Child & Dependent Adult Abuse Reporting -8-

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Appendix A A-1

Appendix B B-1

Appendix C C-1

OBJECTIVES

At the end of this lesson, the student will be able to:

Identify the EMS Provider's primary responsibilities

List 5 types of law

Define the following medico/legal issues:
- Duty to act
- Abandonment
- Standard of care
- Confidentiality
- Negligence
- Consent
- Refusal of care
- Choice of destination

Identify documentation requirements

Locate & identify the Iowa Good Samaritan Law

Locate & identify Iowa's law regarding living wills

Locate & identify Iowa's law regarding AIDS and the EMS Provider's role and responsibility

Locate and identify Iowa's child & dependent adult abuse reporting law and the EMS Provider's role and responsibility

Locate & identify Iowa's law regarding operation of an emergency vehicle

Locate & identify Iowa's administrative rules governing First Responder, EMT-A and ERTs' certification and recertification requirements

*Locate & identify Iowa's administrative rules governing advanced EMS Provider's certification and recertification requirements

*Locate & identify Iowa's administrative rules governing the operation of advanced ambulance/rescue services

---

*To be covered in the EMT-I & EMT-P classes only

ROLES AND RESPONSIBILITIES OF THE EMS PROVIDER

IOWA DEPARTMENT OF PUBLIC HEALTH
EMERGENCY MEDICAL SERVICES SECTION
LUCAS STATE OFFICE BUILDING
DES MOINES, IOWA 50319-0075
(515) 281-3741

INTRODUCTION

The EMS Provider's primary responsibilities are to bring competent emergency medical care to the victims of accidents or sudden illness, stabilize their conditions and transport them safely and expeditiously to the proper medical facility. As an EMS Provider you must be able to perform duties unsupervised, in a great variety of circumstances, and often under considerable physical and emotional stress.

The EMS Provider is a very important initial component of the emergency medical care system. With proper training, you will be able to provide emergency medical care to victims of emergencies as well as minimize discomfort and further injury. Your actions may mean the difference between life and death of the victim. Proper care of the patient at the scene can minimize patient suffering and reduce recovery time.

The responsibilities associated with being an EMS Provider are major. You will provide a service in a special environment requiring special skills and knowledge in such areas as communication, transportation, recordkeeping and liaison with other emergency services and health care professionals.

ROLES AND RESPONSIBILITIES

The primary responsibility of an EMS provider is to the ill or injured patient that has requested your assistance and then quickly and efficiently transport the patient to the nearest appropriate medical facility. This patient care role would include:

Basic life support
Patient assessment
Patient stabilization
Appropriate patient handling
Safe and efficient transport
Continual patient monitoring
Transport to Hospital ER

In addition to the above mentioned responsibilities, the EMS Provider may be required to perform special functions if other emergency services are not available. These special functions may include:

Use of rescue tools for extrication purposes
Control of the scene, including hazardous materials
Controlling the actions of bystanders
Dealing with grief

Other functions considered an integral part of the EMS Provider's role and responsibilities include:

- Communications
  - Dispatcher
  - Police
  - Fire
  - Hospital
- Reporting and recordkeeping
- Emergency Driving
- Vehicle maintenance
- Equipment care

As a health-care professional, you must understand the EMS system in which you work as well as your responsibilities to your patient and the public before, during and after the emergency.

TYPES OF LAW

1. Common Law: The sum total of court rulings on earlier and similar cases.
2. Statutory Law: Created by a law-making or legislative body.
3. Administrative Law: Enacted by an administrative agency to regulate a trade, profession, or area of commerce.
4. Criminal Law: Pertains to the violation of a law.
5. Civil Law: Pertains to the damages incurred (lawsuit)

DUTY TO ACT

1. When you are under a contractual duty: Relationships between patients and health providers are usually based on a contractual relationship, or the understanding that the provider agrees to render service to the patient.
2. When you begin to act: Starting treatment imposes the duty on you to see the treatment through to its conclusion, even though you had no duty to act in the first place.
3. Duty exists to anyone who may be injured through your negligent acts: Duty to act in a non-negligent manner extends not only to patients, but to others who may be injured through your negligence.

ABANDONMENT

Abandonment: Terminating medical care without legal excuse or turning over to lesser qualified personnel, thereby injuring the patient.

An emergency medical care provider is obligated to care for the patient until the patient refuses further medical care or until the patient is under the supervision of other EMS units of equal or greater training. Abandonment may occur under a variety of circumstances:

1. An emergency medical care provider may leave a patient in an emergency department before supervision by ER staff.
2. A rescue or ambulance unit may wrongly decide that a patient does not need emergency treatment and leave the scene.
3. An advanced emergency medical provider may turn over a patient to an EMS unit not capable of providing advanced care.
4. In a triage situation one patient may be left for an unreasonably long time.

Abandonment is a form of negligence, with the liability focusing on the fact that EMS personnel did not provide continuity of care that was required by the patient. Failure to provide continued treatment caused injury to the patient.

STANDARD OF CARE

Generally means that the defendant's conduct did not conform with the reasonable level of skill, prudence, caution, and competence that could be expected under the circumstances. A First Responder is expected to act as a reasonable prudent First Responder, etc.

NEGLIGENCE

To prove negligence, four elements must exist:

1. The defendant had a duty to act.
2. The defendant failed to act by not observing a "Standard of Care".
3. An injury actually occurred.
4. The cause of the injury was the result of the failure to act according to the standard of care.

CONFIDENTIALITY (22.7)

A fire rescue report is a medical record under Iowa section (22.7). The determination of whether any record is a medical record must be made on the basis of the record as a whole. The lawful custodian (ambulance/rescue squad) cannot be compelled to edit out nonmedical information for examination and copying. The lawful custodian may exercise his or her discretion to release all or part of the record provided, that the information is not highly offensive to a reasonable person and is legitimate concern to the public.

DOCUMENTATION

"If you write at all you must write it all, because the law presumes you wrote it all, if and when you write at all."

CONSENT

It is a fundamental principal the consent of a patient, or someone authorized to act for a legally incompetent patient, must be obtained before any medical or surgical treatment is undertaken (actual consent), unless an emergency justifies treatment without consent (implied consent). The reason for this is that any unprompted, intentional touching of the patient's person constitutes the tort (a legal wrong) of assault.

Possible problems:
1. Suicide patients: probably not competent to consent to or refuse care.
2. Minors, conscious: incompetent to consent. Normally, parent would be the responsible person. If a parent is not available, and adult family member would seem to be sufficient.
3. Minor, unconscious: Iowa code would seem to protect prompt transportation.
4. Adults, conscious: Competent, probably can refuse treatment.
5. Adults, unconscious: Probably protected for prompt transportation.
6. Mental incompetents: Probably cannot consent to or refuse care.
7. Mental patients: Probably cannot consent to or refuse care.

REFUSAL OF CARE

A competent adult has a right to determine what should be done with his or her own body. This is based on the concept the patient is the master of his or her own body, and therefore, a patient's express refusal of medical or surgical treatment or a patient's withdrawal of consent to continuation of treatment must be honored - even if death is the likely result. There is no statute in Iowa prohibiting a patient from declining necessary medical treatment or a doctor from honoring the patient's decision.

CHOICE OF DESTINATION

Generally, choice of medical facility is made by the patient or the patient's family. The ambulance service or rescue squad may be obligated in an emergency situation, typically by protocol, to deliver the patient to the nearest facility capable of handling the emergency.

IOWA STATUTE OF LIMITATIONS

A claim for personal injury must be brought within two years of the date of the incident causing the injury. There are two exceptions to this limitation under Iowa law. A medical malpractice action must be brought two years after the date the claimant knew or should have known through the use of reasonable diligence or received notice in writing of the existence of injury or death for which damages are sought in the action, whichever dates occur first. However, no malpractice action shall be brought more than six years after the date on which occurs the act or omission or occurrence alleged to have caused the injury or death unless a foreign object unintentionally left in the body caused the injury or death. A minor may bring a cause of action for a personal injury at any time from date of injury to within one year after the minor reaches majority.

GOOD SAMARITAN LAW (613.17)

Any person, who in good faith renders emergency care or assistance without compensation shall not be liable for any civil damages for acts or omissions occurring at the place of an emergency or accident or while the person is in transit to or from the emergency or accident or while the person is at or being moved to or from an emergency shelter unless such acts or omissions constitute recklessness. For the purposes of this section, if a volunteer fire fighter, a volunteer operator or attendant of an ambulance or rescue squad service, a volunteer paramedic, or a volunteer emergency medical technician receives nominal compensation not based upon the value of the services performed, that person shall be considered to be receiving no compensation. The operation of a motor vehicle by a volunteer fire fighter, volunteer operator or attendant of an ambulance or rescue squad service, a volunteer paramedic, or volunteer emergency medical technician shall be considered rendering emergency care or assistance.

LIFE-SUSTAINING PROCEDURES (144A.7)

Iowa laws recognize the right of an adult to make a written declaration instructing the adult's physician to provide, withhold, or withdraw life-sustaining procedures or to designate another to make treatment decisions, in the event the person is diagnosed as suffering from a terminal condition.

Procedure in absence of declaration:

1. Life-sustaining procedures may be withheld or withdrawn from a patient who is in a terminal condition and who is comatose, incompetent, or otherwise physically or mentally incapable of communication if there is consultation and written agreement for the withholding or the withdrawal of life-sustaining procedures between the attending physician and any of the following individuals, who shall be guided by the express or implied intentions of the patient, in the following order of priority if no individual in a prior class is reasonably available, willing, and competent to act:
   - a. The attorney in fact.
   - b. The guardian of the person.
   - c. The patient's spouse.
   - d. An adult child of the patient.
   - e. A parent of the patient, or parents if both are reasonably available.
   - f. An adult sibling.
2. When a decision is made to withhold or withdraw life-sustaining procedures, there shall be a witness present at the time of the consultation when that decision is made.
3. Items 1 and 2 above shall not be in effect for a patient who is known to the attending physician to be pregnant with a fetus that could develop to the point of live birth with continued application of life-sustaining procedures.

The act makes it clear that a licensed physician is necessarily involved in the decision and that a diagnosis must be made. In other words, no provider of medical care other than a physician can make the determination. Accordingly, an EMS Provider or a nurse should not follow the direction of a patient or a family member. There is a requirement for physician diagnosis, consultation and written agreement.

Short of the "DNR" order, a patient who is without spontaneous respiration or cardiac function should be resuscitated and a patient who is a candidate for CPR has at least impliedly consented to treatment. This consent controls over the wishes of family members and probably over the authority of anyone other than the patient's physician.

An exception to the requirement to attempt resuscitation would be where:

1. Signs of trauma are conclusively incompatible with life.
2. Physical decomposition of the body.
3. Rigor mortis is present.

An EMS Provider is simply not qualified to make the medical or clinical judgments or ethical decisions that death would be more humane or that the patient is not salvable. If one of the suggested preceding clinical criteria of death is not conclusively established, vigorous resuscitation should be commenced and continued until the patient is pronounced dead in the physical presence of a physician.

AIDS (141.1)

A person possessing AIDS information shall not disclose the identity of any other person upon whom an HIV-related test is performed or the results of such a test in a manner which would permit identification of another person and a person shall not be compelled to disclose the identity of any person upon whom an HIV-related test is performed, or the results of the test in a manner which permits identification of the subject of the test, except to any of the following persons:

a. The subject of the test or the subject's legal guardian.

b. Any person who secures a written release of test results.

c. An authorized agent or employee of a health facility or health care provider if the health facility or health care provider ordered or participated in the testing or is otherwise authorized to obtain the test results, the agent or employee provides patient care or handles or processes specimens of body fluids or tissues, and the agent or employee has a medical need to know such information.

d. Licensed medical personnel providing care to the subject of the test, when knowledge of the test results is necessary to provide care or treatment.

e. The department in accordance with reporting requirements for an HIV-related condition.

f. A health facility or health care provider which procures, processes, distributes, or uses a human body part from a deceased person with respect to medical information regarding that person, or semen provided prior to July 1, 1988, for the purpose of artificial insemination.

g. A person allowed access to a record by a court order which is issued in compliance with the following provisions:

(1) There is a court finding that the person seeking the test results has demonstrated a compelling need for the test results which cannot be accommodated by other means. In assessing compelling need, the court shall weigh the need for disclosure against the privacy interest of the test subject and the public interest which may be disserved by disclosure due to its deterrent effect on future testing or due to its effect in leading to discrimination.

(2) Pleadings pertaining to disclosure of test results shall substitute a pseudonym for the true name of the subject of the test. The disclosure to the parties of the subject's true name shall be communicated confidentially, in documents not filed with the court.

(3) Before granting an order, the court shall provide the person whose test results are in question with notice and a reasonable opportunity to participate in the proceedings if the person is not already a party.

(4) Court proceedings as to disclosure of test results shall be conducted in camera unless the subject of the test agrees to a hearing in open court or unless the court determines that a public hearing is necessary to the public interest and the proper administration of justice.

(5) Upon the issuance of an order to disclose test results, the court shall impose appropriate safeguards against unauthorized disclosure, which shall specify the persons who may gain access to the information, the purposes for which the information shall be used, and appropriate prohibitions on future disclosure.

h. An employer, if the test is authorized to be required under any other provision of law.

Emergency Responder Testing Program:

If an EMS Provider in the course of responding to an emergency renders aid to an injured person and becomes exposed to bodily fluids of the injured person, that emergency responder shall be entitled to HIV testing in accordance with the latest available medical technology to determine if infection with the human immunodeficiency virus has occurred. The costs of the test shall be paid for through the expenditure of funds appropriated to the department for AIDS-related activities.

CHILD AND DEPENDENT ADULT ABUSE REPORTING (232.68)(235B.1)

Mandatory reporters of suspected child and dependent adult abuse include a licensed physician and surgeon, osteopath, osteopathic physician and surgeon, dentist, optometrist, podiatrist or chiropractor; a resident or intern in any of such professions; a licensed dental hygienist, a registered nurse or licensed practical nurse; and a basic emergency medical care provider or an advanced emergency medical care provider.

The above classes of persons shall make a report within twenty-four hours.
A toll free number is provided. 1-800-362-2178

A person required to make a report, other than a physician whose professional practice does not regularly involve providing primary health care to children, shall complete two hours of training relating to the identification and reporting of child abuse within six months of initial employment or self-employment involving the examination, attending, counseling, or treatment of children on a regular basis. Within one month of initial employment or self-employment, the person shall obtain a statement of the abuse reporting requirements from the person's employer. The person shall complete at least two hours of additional child abuse identification and reporting training every five years. If the person is an employee of a hospital or similar institution, or of a public or private institution, agency, or facility, the employer shall be responsible for providing the child abuse identification and reporting training. If the person is self-employed, the person shall be responsible for obtaining the child abuse identification and reporting training.

EMERGENCY VEHICLES (321.1)

The driver of any authorized emergency vehicle, may:

1. Park or stand an authorized emergency vehicle, irrespective of the laws.
2. Disregard laws or regulations governing direction of movement for the minimum distance necessary before an alternative route that conforms to the traffic laws and regulations is available.
3. Proceed past a red or stop signal or stop sign, but only after slowing down as may be necessary for safe operation.
4. Exceed the maximum speed limits so long as the driver does not endanger life or property.

The exemptions granted to an authorized emergency vehicle shall apply only when such vehicle is making use of an audible or visual signaling device.

The above provisions shall not relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons, nor shall the above provisions protect the driver from the consequences of the driver's reckless disregard for the safety of others.

Upon the immediate approach of an authorized emergency vehicle with any lamp or device displaying a red light, or an authorized emergency vehicle of a fire department displaying a blue light, or when the driver is giving audible signal by siren, exhaust whistle, or bell, the driver of every other vehicle shall yield the right of way and shall immediately drive to a position parallel to, and as close as possible to, the right hand edge or curb of the highway clear of any intersection and shall stop and remain in such position until the authorized emergency vehicle has passed, except when otherwise directed by a police officer.

A flashing white light shall only be used on a vehicle when used in conjunction with hazard lights and a flashing white light shall not be used on a vehicle except in any of the following circumstances:

1. On a vehicle owned or exclusively operated by an ambulance, rescue, or first responder service.
2. On a vehicle authorized by the director of public health when all the following apply:
   (a) The vehicle is owned by a member of an ambulance, rescue or first responder service.
   (b) The request for authorization is made by the member on forms provided by the Iowa department of public health.
   (c) Necessity for authorization is demonstrated in the request.
   (d) The head of an ambulance, rescue or first responder service certifies that the member is in good standing and recommends that the authorization be granted.
3. On an authorized emergency vehicle.

BASIC CARE RULES 641--131.1 (147)

Certification levels for basic care:

First Responder (FR):
Forty hours of classroom instruction
Clinical experience may be required
Field experience may be required

Emergency Medical Technician (EMT-A)
One hundred two hours of classroom instruction
Eighteen hours of clinical time
Field experience may be required

Specialty certifications:

Emergency Rescue Technician (ERT)
Forty hours of classroom instruction
Clinical experience may be required
Field experience may be required

Emergency Medical Services Instructor (EMS-I)
Thirty hours of classroom instruction

To be eligible for State certification as a First Responder, EMT-A, or an ERT, the student must be currently certified in CPR, pass a State written and practical examination and have a high school diploma or equivalent. A student who fails to attain at least a 70 percent overall score on the written certification examination will have two additional opportunities to complete the entire examination and attain a passing score.

A student who fails to pass the practical or written certification examination on the third attempt and who wishes to pursue certification must repeat the entire course.

Scope of the basic care provider:

Iowa does not have basic care legislation that governs the scope of the basic care provider working for an ambulance/rescue service that is not authorized by the Department of Public Health under 641--132 (147A).

Renewal of certification:

All continuing education requirements to renew a certification must be completed during the certification period and prior to the certificate's expiration date. Failure to complete the continuing education requirements prior to the expiration date will result in lapsed certification. No more than 90 days after the expiration date is allowed for the submission of the "Application for Renewal of Certification" booklet. After 90 days, the certification is considered lapsed and the individual can not function as a basic emergency medical care provider.

An individual who did not complete the required continuing education during the certification period may seek to reinstate a lapsed certificate. The requirements to reinstate a certification are as follows:

1. Complete continuing education courses equivalent to the renewal requirements for that particular level of certification within six years following the certificate's expiration date. (Table 1 outlines the total number of hours required for each level).
2. Meet all applicable eligibility requirements.
3. Submit an "EMS Reinstatement Application" and the applicable fees.
4. Pass the appropriate practical and written certification examinations.

TABLE 1

	REQUIRED CONTINUING EDUCATION HOURS FOR REINSTATEMENT (including required topics)	
CERTIFICATION LAPSED FOR	**FR**	**EMT-A**
Less than 2 years	14	24
2 - 4 years	28	48
4 - 6 years	42	72

If a certification has been expired for more than six years, the entire course must be repeated.

Renewal standards:

In order to renew a FR certification, the following is required:

14 hours of approved continuing education including at least one hour in each of the following required topic areas:

1. Infectious diseases
2. Abuse (child and dependent adult)
3. Trauma emergencies (should include skills practice)
4. Medical emergencies (should include skills practice)

In order to renew an EMT-A certification the following is required:

24 hours of approved continuing education including at least one hour in each of the following required topic areas:

1. Infectious diseases
2. Abuse (child and dependent adult)
3. Trauma emergencies (should include skills practice)
4. Medical emergencies (should include skills practice)

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In order to renew an ERT certification the following is required:

Maintain a medical certification and complete at least one hour in each of the following required topic areas:

1. Agricultural/industrial rescue
2. Rescue equipment/techniques
3. Special hazards
4. Vehicle rescue

In order to renew an EMS-Instructor certification the certificate holder must attend at least one EMS-I workshop sponsored by the State EMS Section.

Continuing education approval:

Continuing education hours (CEHs) may be issued for the following types of training during the certification period:

1. Courses which are based upon the curricula for EMS providers and other courses pertinent to basic emergency medical care. Approved self-study and video courses are permitted (4 hours maximum for FR; 8 hours maximum for EMT-A.
2. In-hospital clinical experience in areas relating to emergency medical care (4 hours maximum for FR; 8 hours maximum for EMT-A.
3. Disaster drills (4 hours maximum).
4. Continuing education course instructors will be granted the appropriate number of CEHs for courses taught.
5. EMS course instructors will be granted the appropriate number of CEHs for courses taught. When identical courses are taught, CEHs are granted for the first course only.
6. Practical certification examination evaluation (6 hours maximum).
7. EMS course attendance (or audit) will qualify as continuing education based upon the number of hours attended (or audited).
8. Basic care continuing education hours which have been approved are also considered approved for advanced emergency medical care personnel.

CEHs are not approved for CPR course attendance, CPR course instruction, CPR instructor training or courses which are beyond the scope of training and authority for basic emergency medical care personnel.

Certification through endorsement:

An individual currently certified by another state or by the National Registry of EMTs must also possess a current Iowa certificate to be considered certified. To receive Iowa certification based on endorsement, the candidate must:

1. Complete and submit an "EMS Endorsement Application"
2. Provide verification of current certification in another state or with the National Registry of EMTs.
3. Provide verification of current certification in CPR.
4. Pass the appropriate Iowa practical and written certification examinations.

ADVANCED CARE RULES 641-132.1 (147A)

In 1978, the Iowa legislature passed 147A which allowed the utilization of certified advanced emergency medical care providers. The rule making authority was split between two state agencies. The Iowa Board of Medical Examiners adopted rules regarding the training and certification of advanced emergency care providers, while the Iowa Department of Public Health adopted rules relating to the operation of ambulance, rescue, and first response services who wished to use the services of advanced emergency medical care providers

In 1989, an agreement (28E) between the two state agencies brought the administration of 147A under the Iowa Department of Public Health. Although the Iowa Board of Medical Examiners still retains the authority mandated in 147A, the Department now administers the program.

Certification levels for advanced care:

Emergency Medical Technician-Defibrillation (EMT-D)
First Responder-Defibrillation (FR-D)
- Four hours of classroom instruction for automated defibrillators
- Sixteen hours of classroom instruction for manual defibrillators
- Clinical experience may be required
- Field experience may be required

Emergency Medical Technician-Intermediate (EMT-I)
- Sixty hours of classroom instruction
- Fifty hours of clinical experience
- Fifty hours of field experience

Emergency Medical Technician-Paramedic (EMT-P)
- Three hundred hours of classroom instruction
- One hundred fifty hours of clinical experience
- One hundred fifty hours of field experience

Scope of the advanced emergency medical care provider:

An advanced emergency medical care provider may render advanced emergency medical care in those areas for which the advanced emergency medical care provider is certified, but only as part of an authorized advanced care service program during the following:

1. At the scene of an emergency;
2. During transportation to a hospital;
3. While in the hospital emergency department; and
4. Until patient care is directly assumed by a physician or by authorized hospital personnel.

An advanced emergency medical care provider may also function in any hospital when:

1. Enrolled as a student or participating as a preceptor in a training program;
2. Fulfilling continuing education requirements;
3. Employed by or assigned to a hospital as a member of an authorized advanced care service program, by rendering lifesaving services in the facility in which employed or assigned pursuant to the advanced emergency medical care provider's certification and under direct supervision of a physician or registered nurse. An advanced emergency medical care provider cannot routinely function without the direct supervision of a physician or registered nurse. However, when the physician or registered nurse cannot directly assume emergency care of the patient, the advanced emergency medical care personnel may perform, without direct supervision, emergency medical care procedures for which certified, if the life of the patient is in immediate danger and such care is required to preserve the patient's life;
4. Employed by or assigned to a hospital as a member of an authorized advanced care service program to perform nonlifesaving procedures for which trained and designated in a written job description. Such procedures may be performed after the patient is observed by and when the advanced emergency medical care provider is under the supervision of the physician or registered nurse and where the procedure may be immediately abandoned without risk to the patient.

Approved skills:

Advanced emergency medical care skills which may be performed if approved by the service program's medical director include:

At the FR-D level:

1. Automated defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision making by the FR-D).

At the EMT-D level:

1. Defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision-making by the EMT-D).

At the EMT-I level:

1. Initiation, maintenance and monitoring of nonmedicated intravenous solutions (using the peripheral venous system including the external jugular vein).
2. Esophageal intubation.
3. Endotracheal intubation when using a blindly inserted, combinedesophageal/endotracheal device.
4. Gastric tube insertion.
5. Defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision making by the EMT-I).

At the EMT-P level:

1. Defibrillation, cardioversion and external cardiac pacing.
2. Endotracheal and esophageal intubation and suctioning.
3. Initiation, maintenance and monitoring of nonmedicated and medicated intravenous solutions (using the peripheral venous system, including the external jugular vein).
4. Maintenance and monitoring of intravenous infusion of blood and blood products.
5. Administration of oral, intravenous, inhaled, intramuscular, subcutaneous and topical medications approved by the medical director.
6. Direct laryngoscopy.
7. Gastric tube insertion.
8. Nasogastric tube insertion.
9. Rotating tourniquets.
10. Urinary catheterization.
11. Cricothyrotomy and transtracheal jet insufflation.
12. Tension pneumothorax decompression.

Certification and enrollment requirements:

Enrollment in an advanced emergency medical care provider program requires the following:

1. at least 18 years of age
2. Have a high school diploma or its equivalent
3. Be able to speak, write and read English
4. Be currently certified in CPR
5. Be currently certified as a FR, if enrolling in an FR-D course
6. Be currently certified as an EMT-A, if enrolling in an advanced EMT or paramedic course

A student who fails the practical certification examination is required to repeat only those stations which were failed and will have two additional opportunities to attain a passing score. The student may repeat the failed examination stations on the same day if approved by the training program.

A student who fails to attain at least a 75 percent overall score on the written certification examination will have two additional opportunities to complete the entire examination and attain a passing score.

Any student who fails to pass the practical or written certification examination on the third attempt and who still wishes to pursue certification must repeat the didactic portion of the course within two years after the third attempt. After two years, the entire course must be repeated.

Renewal of certification:

All continuing education requirements must be completed during the certification period and prior to the certificate's expiration date. Failure to complete the continuing education requirements prior to the expiration date shall result in a lapsed certification. No more than 90 days after the expiration date is allowed for the submission of the "Application for Renewal of Certification" booklet to document completion of continuing education requirements. After 90 days, the certification is considered lapsed and the individual may not function as an advanced emergency medical care provider.

Reinstatement:

An individual who did not complete the required continuing education during the certification period and is seeking to reinstate a lapsed certificate must complete the following:

1. Complete continuing education courses equivalent to the renewal requirements for that particular level of certification within six years following the certificate's expiration date. Table 1 outlines the total number of hours required.
2. Meet all applicable eligibility requirements.
3. Submit an "EMS Reinstatement Application" and the applicable fees.
4. Pass the appropriate practical and written certification examinations.

TABLE 1

	REQUIRED CONTINUING EDUCATION HOURS FOR REINSTATEMENT (including required topics)			
CERTIFICATION LAPSED FOR	**FR-D**	**EMT-D**	**EMT-I**	**EMT-P**
Less than 2 years	14	24	48	60
2 - 4 years	28	48	96	120
4 - 6 years	42	72	144	180

If a certification has been expired for more than six years, the individual must repeat the entire course.

Renewal requirements:

To be eligible for renewal, the certificate holder must:

1. Have signed and submitted an "Application for Renewal of Certification" within 90 days after the certificate's expiration date.
2. Have a current CPR certificate or a signed and dated statement from a certified CPR instructor that documents current certification in CPR. Paramedics must also have a current ACLS certification or a signed and dated statement from a certified ACLS instructor that documents current certification in ACLS.

CEH requirements for each level is as follows:

1. FR-D - 14 hours
2. EMT-D - 24 hours
3. EMT-I - 48 hours
4. EMT-P - 60 hours

Required topics for all levels include at least one hour in each of the following:

1. Infectious diseases
2. Abuse (child and dependent adult)
3. Trauma emergencies (should include skills practice)
4. Medical emergencies (should include skills practice)

Continuing education approval:

Continuing education hours (CEHs) may be issued for the following types of training during the certification period:

1. Courses which are based upon the curricula for EMS providers and other courses pertinent to emergency medical care. Approved self-study and video courses are permitted (4 hours maximum for FR-D; 8 hours maximum for EMT-D, 16 hours maximum for EMT-I; 20 hours maximum for EMT-P).
2. In-hospital clinical experience in areas relating to emergency medical care (4 hours maximum for FR-D; 8 hours maximum for EMT-D; 16 hours maximum for EMT-I; 20 hours maximum for EMT-P).
3. Disaster drills (4 hours maximum).
4. Continuing education course instructors will be given the appropriate number of CEHs for the courses taught.
5. EMS course instructors will be given the appropriate number of CEHs for the courses taught. When identical courses are taught, CEHs will be given for the first course only.
6. Practical certification examination evaluation (6 hours maximum).

7. EMS course attendance (or audit) will qualify as continuing education based upon the number of hours attended (or audited).
8. ACLS training (6 hours maximum).
9. Basic care continuing education hours which have been approved are also considered approved for advanced emergency medical care personnel.

CEHs will not be approved for CPR course attendance, CPR course instruction, CPR instructor training, or courses which are beyond the scope of training and authority for advanced emergency medical care personnel.

Certification through endorsement:

An individual currently certified by another state or by the National Registry of EMTs must also possess a current Iowa certificate to be considered certified. To receive Iowa certification, the individual must:

1. Complete and submit the "EMS Endorsement Application"
2. Provide verification of current certification in another state or with the National Registry of EMTs.
3. Provide verification of current certification in CPR. Applicants for paramedic endorsement must also provide verification of certification in ACLS.
4. Pass the appropriate Iowa practical and written certification examinations
5. Meet all other applicable eligibility requirements necessary for Iowa certification.

SERVICE PROGRAM AUTHORIZATION (641–132.7) (147A)

An ambulance, rescue or first response service in Iowa that desires to provide advanced emergency medical care, in the prehospital setting must apply to the Department of Public Health for authorization to establish a program utilizing certified advanced emergency medical care providers for delivery of the care at the scene of an emergency, during transportation to a hospital, or while in the hospital emergency department and until care is directly assumed by a physician or by authorized hospital personnel.

Service program–operational requirements:

A fully authorized service program must maintain an adequate number of primary response vehicles and personnel to provide twenty-four hour per day, seven day per week service at their authorized level. The adequate number of primary response vehicles and personnel to be maintained is determined by the Department of Public Health and is based upon, but not limited to, the following:

1. Number of calls;
2. Service area and population; and
3. Availability of other services in the area.

Ground ambulance services must provide, as a minimum, one advanced EMT or paramedic and one EMT-A. Rescue and first response service programs must provide, as a minimum, only one advanced emergency medical care provider.

Secondary response vehicles are not required to meet the vehicle standards, staffing and equipment requirements of primary response vehicles. When advanced emergency medical care is to be provided, however, appropriate staff, equipment and supplies must also be provided to ensure continuity of care. If an advanced emergency medical care provider is not available to staff and to provide advanced emergency medical care on a secondary response vehicle, a registered nurse, physician or physician's assistant may provide that care pursuant to their license.

Medical direction:

"Off-line medical direction" - The monitoring of EMS providers through retroactive field assessments and treatment documentation review, critiques of selected cases with the EMS personnel, and statistical review of the system.

"On-line medical direction" - Immediate medical advice via radio or phone communications between the EMS provider and the medical director, supervising physician or physician designee.

Advanced emergency medical care personnel may perform advanced emergency medical care in life-threatening situations or in cases of communication failure without contacting a supervising physician or physician designee if written protocols have been approved by the service program medical director which clearly identify when the protocols may be used in lieu of voice contact.

The medical director is responsible for providing appropriate medical direction and overall supervision of the medical aspects of the service program. The medical director's duties include, but need not be limited to:

1. Developing, approving and updating protocols to be used by service program personnel.
2. Developing and maintaining liaisons between the service, other physicians, physician designees, and hospitals.
3. Monitoring and evaluating the activities of the service program and individual personnel performance.
4. Assessing the continuing education needs of the service and individual service program personnel and assisting them in obtaining the appropriate continuing education programs.
5. Being available for individual evaluation and consultation to service program personnel.
6. Performing or appointing a designee to complete the medical audits.
7. Ensuring maintenance of skills by service program personnel.
8. Informing the medical community of the advanced emergency medical care being provided according to approved protocols in the service program area.
9. Helping to resolve service operational problems.

Conditional service program authorization:

Any service that is unable to meet the 24-hour-per-day staffing requirement to receive full authorization at the advanced emergency medical care provider level but wishes to provide advanced care on an intermittent basis, may apply for a conditional authorization. The service must:

1. Justify why the service is unable to meet the 24 hour staffing requirement.
2. Provide a description of how the service intends to inform the service program area of the service's conditional status.
3. If approved, must not advertise or otherwise imply or hold itself out to the public as a fully authorized service program.
4. If approved, utilize advanced emergency medical care providers as appropriate to their level of certification up to and including the level of conditional authorization.
5. If an ambulance service, provide as a minimum, one EMT-A and one FR on each primary response vehicle call. The FR must be the driver unless a third person is present to act as the driver. The service must document each driver's training in emergency driving techniques and in the use of the service's communications equipment.
6. If a rescue or first response service, have a written mutual aid agreement with at least one ground ambulance service to ensure coverage when no certified personnel are available.

Essential equipment and vehicle standards:

Ground ambulance service programs must, as a minimum, use primary response vehicles that meet the Iowa ambulance standards (appendix A). See appendix C for ambulance types.

Further, primary response vehicles must be equipped, as a minimum, with the Iowa essential equipment for primary response vehicles. Iowa's essential equipment is outlined below:

Iowa essential equipment for primary response vehicles:

1. Portable suction apparatus with wide-bore tubing and rigid pharyngeal suction tip.
2. Hand-operated bag-valve-mask unit with adult, child, and infant size masks or separate units for each size (an oxygen demand valve may be used in lieu of the adult size unit).
3. Oropharyngeal airways in adult, child, and infant sizes.
4. Portable oxygen equipment with pressure and liter flow gauges.
5. Oxygen nasal cannulas.
6. Oxygen masks in adult, child, and infant sizes (including a partial or nonrebreather adult size mask).
7. Bite stick.
8. Pocket mask or equivalent.
9. Large and small sterile dressings.
10. Soft roller bandages.
11. Tape of various sizes.
12. Clean burn sheets (need not be sterile).
13. Occlusive dressing (occlusive gauze, plastic wrap, or defibrillator pads).
14. Lower extremity traction splint.
15. Extremity immobilizing device (board, ladder, or formable splint).
16. Short spine board (or equivalent extrication device) and long spine board.
17. Triangular bandages or slings.
18. Shears and scissors.
19. Sterile obstetrical kit.
20. Aluminum foil or silver swaddler (or equivalent) to maintain infant body temperature.
21. Stethoscope and blood pressure cuff (adult size required with pediatric size recommended).
22. Medical antishock trousers (adult size required with convertible or pediatric size recommended).
23. Penlight or equivalent and flashlight.
24. Rigid extrication collars (Philadelphia, stiff-neck or equivalent) in at least three basic sizes.

Rotorcraft ambulances must be equipped, as a minimum, with the Iowa essential equipment for primary response vehicles (excluding lower extremity traction splints and long spine boards).

Rescue service programs must, as a minimum, use primary response vehicles that meet the Iowa rescue and first response vehicle standards. When primary response vehicles are utilized in first response service programs, they shall, as a minimum, meet the Iowa rescue and first response vehicle standards (Appendix B).

Rescue and first response service programs must be equipped, as a minimum, with the following equipment:

1. Bite stick.
2. Pocket mask or equivalent.
3. Large and small sterile dressings.
4. Soft roller bandages.
5. Tape of various sizes.
6. Clean burn sheets (need not be sterile).
7. Occlusive dressing (occlusive gauze, plastic wrap, or defibrillator pads).
8. Extremity immobilizing device (board, ladder or formable splint).
9. Triangular bandages or slings.
10. Shears and scissors.
11. Sterile obstetrical kit.
12. Aluminum foil or silver swaddler (or equivalent) to maintain infant body temperature.
13. Penlight or equivalent and flashlight.

FR-D service programs must have, as a minimum, one automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder.

Primary response vehicles used in EMT-D service programs must have, as a minimum, one manual or automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder.

Primary response vehicles used in EMT-I service programs must have, as a minimum, one manual or automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder. Primary response vehicles must also have, as a minimum, the following additional equipment and supplies:

1. Alcohol or betadine wipe
2. Intravenous fluids
    - Lactated ringers
    - 5 percent Dextrose in water
3. Macro-drip administration set
4. Micro-drip administration set
5. Tourniquet
6. 16 gauge IV needle
7. 18 gauge IV needle
8. 20 gauge IV needle
9. Tape of various sizes
10. Esophageal airway

Primary response vehicles used in EMT-P service programs must have, as a minimum, one manual or automated, portable, battery-operated defibrillator. Primary response vehicles must also have, as a minimum, the EMT-I required supplies listed above, and the following additional equipment and supplies:

1. Required supplies:
    - Endotracheal airways
    - Laryngoscope
2. Required drugs:
    - Atropine sulfate
    - Bretylium tosylate
    - Dextrose 50 percent injectable
    - Diazepam
    - Dopamine HCl
    - Epinephrine HCl (1:10,000)
    - Epinephrine HCl (1:1,000)
    - Glucose paste
    - Isoproterenol HCl
    - Lidocaine HCl (for bolus and infusion)
    - Morphine sulfate
    - Naloxone
    - Nitroglycerin tablets
    - Sodium bicarbonate
    - Syrup of ipecac

Other drugs may be administered upon completion of training and establishment of a written protocol approved by the medical director.

Over-the-counter drugs may be administered by FR-D, EMT-D, EMT-I or EMT-P service program personnel upon completion of training and establishment of a written protocol approved by the medical director.

All drugs must be maintained in accordance with the rules of the state board of pharmacy examiners. Accountability for drug exchange, distribution, storage, ownership, and security is subject to applicable state and federal requirements. The method of accountability must be described in a written pharmacy agreement.

Ambulance service programs must maintain a telecommunications system between the advanced emergency medical care provider and the source of their medical direction and other appropriate entities. First response and rescue service programs must maintain a telecommunications system between the advanced emergency medical care provider and the responding ambulance service and other appropriate entities. All communications equipment must be capable of transmitting and receiving clear and understandable voice communications to and from the service program's communications base and all points within the service program's primary service area. All communications must be conducted in an appropriate manner and on a frequency approved by the Federal Communications Commission, the state division of communications, and the Department of Public Health.

APPENDIX A

Vehicle standards:

Ground ambulance service programs must, as a minimum, use primary response vehicles that meet the Iowa ambulance standards. These standards are outlined below:

Iowa ambulance standards:

a. The vehicle shall be capable of a sustained speed of not less than fifty-five mph over dry, hard surfaced, level roads and shall be capable of providing a stable ride during all weather conditions.

b. The vehicle shall be capable of being driven for at least one hundred fifty miles before refueling.

c. The electrical system shall be equipped to include, but shall not be limited to:

(1) Dual twelve-volt batteries with equal ampere rating;

(2) A one hundred thirty ampere alternator system;

(3) Starting, lighting, ignition, visual and audible warning systems and an ampere meter or volt meter;

(4) Owner specified electronics equipment;

(5) Devices that include master consoles located in the cab and patient compartments; and

(6) Other owner specified accessory wiring.

d. All wiring devices, switches, outlets, etc., (except circuit breakers) shall be rated to carry at least one hundred percent of the maximum ampere load for which the circuit is protected. All electrical wiring connectors and controls shall be easily identifiable and readily accessible for checking and servicing without having to move equipment or supplies from their usual location within the vehicle.

e. The electrical generating system shall be reliable at outside temperatures ranging from minus thirty degrees Fahrenheit to plus one hundred twenty degrees Fahrenheit to permit prompt starting of all systems onboard the vehicle while driving to the scene, while idling at the scene for variable periods of time, and while driving from the scene to the hospital with all systems at maximum capacity. The alternator shall be capable of producing a minimum of one hundred thirty amperes at fifty percent of the engine's rated net horsepower RPM rating. An alternator producing more than one hundred thirty amperes at fifty percent of the furnished engine's rated net horsepower RPM rating shall be used when the ampere load of all electrical equipment and accessories requires it. An auxiliary throttle shall be included to control the RPMs of an idling engine.

f. A dual twelve-volt battery system with a labeled "battery selector device" shall be furnished. The batteries shall not be rated less than three hundred seventy-five cold cranking amperes at zero degrees Fahrenheit with one hundred fifteen minutes reserve capacity.

g. The engine cooling system shall be a closed, air free liquid state type with an overflow recovery tank and a coolant compensating system. The cooling system shall maintain the engine at safe operating temperatures at all drivable altitudes and grades that may be encountered during vehicle use.

h. All normal vehicle controls, switches and instruments shall be clearly identified, within normal reach of the driver and visible by day or night.

i. The specified patient compartment controls, switches, and instruments shall be panel mounted and located within normal reach of a seated attendant facing the rear of the patient compartment forward of the primary patient's head. All patient compartment controls shall be clearly identified and visible by day or night.

j. There shall be emergency lights that provide three hundred sixty degrees of visibility and a siren capable of producing at least one hundred decibels at ten feet. A public address system shall be included.

k. There shall be an exterior light over the rear loading door which shall be activated automatically when the door is opened and by a manual switch inside the vehicle. There shall be at least one clear white flood light on each side of the vehicle.

l. There shall be two mounted spotlights or one hand-held spotlight.

m. The patient compartment size (including interior cabinet space) shall be a minimum of:

(1) Head room, sixty inches;

(2) Length, one hundred sixteen inches; and

(3) Width, sixty inches.

APPENDIX A (cont)

n. There shall be an in-line oxygen system that includes, as a minimum, an oxygen cylinder with a storage capacity of at least two thousand liters located in a compartment which is vented to the outside. The pressure gauge, regulator and control valve shall be readily accessible. In addition, there shall be at least one oxygen outlet accessible to the head of the patient stretcher.

o. An engine vacuum with a reservoir or electrically powered suction aspirator system with an air flow of at least thirty liters per minute and a vacuum of at least three hundred millimeters of mercury shall be securely mounted yet readily accessible. The unit shall be equipped with large bore, nonkinking suction tubing and semirigid, oropharyngeal suction tips (nonmetallic) and shall be located in the patient compartment.

p. All vehicles shall be equipped with a complete climate control system(s) to supply and maintain clean air conditions with a comfortable level of inside temperature in both driver and patient compartments. The various systems for heating, ventilation, and air conditioning may be a separate or a combination system which shall permit independent control of the environment within each compartment.

q. An inflated spare tire and wheel assembly, identical to those on the vehicle, together with the necessary tools for tire changing may be carried, and if carried, preferably located outside the patient compartment.

r. All external storage compartments shall be readily accessible and weatherproofed.

s. The type I modular unit, the type II van unit, and the type III integral cab-modular unit shall be of prime commercial quality metal or other material with strength at least equivalent to all-steel. Wood shall not be used for structural framing. The exterior of the body shall have a smooth finish, except for rub rails, and shall include provisions for doors and windows as specified. The ambulance body as a unit shall be designed and built to provide impact and penetration resistance, and shall be of sufficient strength to support the entire weight of the fully loaded vehicle on its top or side if overturned, without crushing, separation of joints, or permanently deforming roof bow or reinforcements, body posts, doors, strainers, stringers, floor, inner linings, outer panels and other reinforcements.

t. Crash-stable quick release devices (i.e., seat belts, fasteners, etc.) shall be available for the following:

(1) One driver and one passenger in the front seat(s);

(2) One attendant at the head of the primary patient stretcher;

(3) Two patients on stretchers, one patient on the primary stretcher and one on a backup stretcher (i.e., stair chair, hanging stretcher, etc.); and

(4) Additional equipment and supplies as appropriate for the level of service (medical care) provided.

u. There shall be adequate space to mount radios and allow easy access for maintenance. The radio system shall allow for radio communications to all appropriate entities from the driver's compartment as well as the patient compartment.

v. Safety equipment shall include, but need not be limited to, flares (or the equivalent) and a readily accessible five-pound ABC fire extinguisher.

APPENDIX B

Iowa rescue and first response vehicle standards:

a. The vehicle shall be capable of a sustained speed of not less than fifty-five mph over dry, hard surfaced, level roads and shall be capable of providing a stable ride during all weather conditions.

b. The electrical system shall be equipped to include, but shall not be limited to:

(1) A single twelve-volt battery (although dual twelve-volt batteries with equal ampere rating would be preferable); and

(2) Starting, lighting, ignition, visual and audible warning systems and an ampere meter or volt meter.

c. All wiring devices, switches, outlets, etc., (except circuit breakers) shall be rated to carry at least one hundred percent of the maximum ampere load for which the circuit is protected. All electrical wiring connectors and controls shall be easily identifiable and readily accessible for checking and servicing.

d. The electrical generating system shall be reliable at outside temperatures ranging from minus thirty degrees Fahrenheit to plus one hundred twenty degrees Fahrenheit to permit prompt starting of all systems onboard the vehicle.

e. The cooling system shall maintain the engine at safe operating temperatures at all drivable altitudes and grades that may be encountered during vehicle use.

f. All normal vehicle controls, switches and instruments shall be clearly identified, within normal reach of the driver and visible by day or night.

g. There shall be emergency lights that provide three hundred sixty degrees of visibility and a siren capable of producing at least one hundred decibels at ten feet. A public address system shall be included.

h. An inflated spare tire and wheel assembly, identical to those on the vehicle, together with the necessary tools for tire changing may be carried.

i. All external storage compartments shall be readily accessible and weatherproofed.

j. Crash-stable quick release devices (i.e., seat belts, fasteners, etc.) shall be available for the front seat occupants.

k. There shall be adequate space to mount radios and allow easy access for maintenance. The radio system shall allow for radio communications to all appropriate entities from the driver's compartment.

l. Safety equipment shall include, but need not be limited to, flares (or the equivalent) and a readily accessible five-pound ABC fire extinguisher.

APPENDIX E

IOWA EMS

LAW/RULE

SUMMARY

IOWA

EMERGENCY MEDICAL SERVICES

LAW/RULE SUMMARY

1990

Iowa Department of Public Health
Emergency Medical Services
Lucas State Office Building
Des Moines, Iowa 50319-0075
515/281-3741

Terry E. Branstad *Governor*	**Ronald D. Eckoff, M.D., MPH** *Acting Director*

INTRODUCTION

This guide is composed of numerous laws and administrative rules relating directly or indirectly to Emergency Medical Services (EMS). The guide is divided into two sections -- the first section includes excerpts or entire chapters from the Iowa Code (laws/statutes) -- the second section include excerpts or entire chapters from the Iowa Administrative Code ("administrative rules").

It is important to note that this Summary often does not provide the entire text of a law or rule. Refer to the IOWA CODE or the IOWA ADMINISTRATIVE CODE for a complete text of a law or rule. Further, this Summary does not attempt to interpret laws or rules and does not contain any information respecting Court decisions which may have interpreted rules or laws or which may have developed or imposed standards of conduct. This Summary is not distributed as a substitution or replacement for individual legal counsel and is not intended as a legal guide; rather, this Summary is distributed as a reference source. The Department of Public Health, EMS Section welcomes any suggestions, corrections or additions to this Summary.

Because laws and rules are constantly changing, this guide can become outdated as soon as it is printed. A date has been provided at the bottom of each page as a reference.

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IOWA

EMERGENCY MEDICAL SERVICES

LAW/RULE SUMMARY

IOWA CODE

RURAL COMMUNITY DEVELOPMENT LOANS
(Iowa Code excerpts)

15.285

1. The new infrastructure category contains projects which are services or processes that do not currently meet the guidelines of standard public works projects. These include, but are not limited to, communication systems, day care, technology transfer adaptation, medical decision-support systems, special transportation services, physical improvements under town square and main street programs, physical improvements to historic, art, and cultural sites and attractions, emergency medical services, speculative shell building built by a local community development organization, and other projects described in section 384. 24, subsection 4.

CONFIDENTIAL RECORDS
(Iowa Code excerpts)

22.7 Confidential records.

The following public records shall be kept confidential, unless otherwise ordered by a court, by the lawful custodian of the records, or by another person duly authorized to release such information:

2. Hospital records, medical records, and professional counselor records of the condition, diagnosis, care, or treatment of a patient or former patient or a counselee or former counselee, including outpatient. However, confidential communications between a victim of sexual assault or domestic violence and the victim's sexual assault or domestic violence counselor are not subject to disclosure except as provided in section 236A.1.

COMMUNITY DEVELOPMENT LOANS FOR E911
(Iowa Code excerpts)

(73GA, SF2327) 28.120(7)

Notwithstanding subsections 5 and 6, for the fiscal year beginning July 1, 1990, and ending June 30, 1991, five hundred thousand dollars is appropriated from the Iowa community development loan fund to the Iowa finance authority for an E911 financing program. For the fiscal year beginning July 1, 1991, and for each subsequent fiscal year, all moneys in the Iowa community development loan fund are appropriated to the Iowa finance authority for the E911 financing program.

WORKERS' COMPENSATION
(Iowa Code excerpts)

85.36(10)

a. In computing the compensation to be allowed a volunteer fire fighter, basic or advanced emergency medical care provider, or reserve peace officer, the earnings as a fire fighter, basic or advanced emergency medical care provider, or reserve peace officer shall be disregarded and the volunteer fire fighter, basic or advanced emergency medical care provider, or reserve peace officer, shall be paid an amount equal to the compensation the volunteer fire fighter, basic or advanced emergency medical care provider, or reserve peace officer would be paid if injured in the normal course of the volunteer fire fighter's, basic or advanced emergency medical care provider's, or reserve peace officer's regular employment or an amount equal to one hundred and forty percent of the statewide average weekly wage, whichever is greater.

85.61 Definitions.

In this and chapters 86 and 87, unless the context otherwise requires, the following definitions of terms shall prevail:

1. "*Employer*" includes and applies to a person, firm, association, or corporation, state, county, municipal corporation, school corporation, area education agency, township as an employer of volunteer fire fighters and basic or advanced emergency medical care providers only, benefited fire districts, and the legal representatives of a

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deceased employer. "*Employer*" includes and applies to a rehabilitation facility approved for purchase-of-service contracts or for referrals by the department of human services or the department of education.

2. "*Worker*" or "*employee*" means a person who has entered into the employment of, or works under contract of service, express or implied, or apprenticeship, for an employer; an executive officer elected or appointed and empowered under and in accordance with the charter and bylaws of a corporation, including a person holding an official position, or standing in a representative capacity of the employer; an official elected or appointed by the state, or a county, school district, area education agency, municipal corporation, or city under any form of government; a member of the Iowa highway safety patrol; a conservation officer; and a proprietor or partner who elects to be covered pursuant to section 85.1A, except as specified in this chapter.

"*Worker*" or "*employee*" includes an inmate as defined in section 85.59 and a person described in section 85.60.

"*Worker*" or "*employee*" includes a basic emergency medical care provider as defined in section 147.1, or an advanced emergency medical care provider as defined in section 147A.1, only if an agreement is reached between the basic or advanced emergency medical care provider, and the employer for whom the volunteer services are provided that workers' compensation coverage under chapters 85, 85A, and 85B is to be provided by the employer. A basic or advanced emergency medical care provider who is a "worker" or "employee" under this paragraph is not a casual employee.

5. The words "*injury*" or "*personal injury*" shall be construed as follows:

a. They shall include death resulting from personal injury.

b. They shall not include a disease unless it shall result from the injury and they shall not include an occupational disease as defined in section 85A.8.

6. The words "*personal injury arising out of and in the course of the employment*" shall include injuries to employees whose services are being performed on, in, or about the premises which are occupied, used, or controlled by the employer, and also injuries to those who are engaged elsewhere in places where their employer's business required their presence and subjects them to dangers incident to the business.

Personal injuries sustained by a volunteer fire fighter arise in the course of employment if the injuries are sustained at any time from the time the volunteer fire fighter is summoned to duty as a volunteer fire fighter until the time the volunteer fire fighter is discharged from duty by the chief of the volunteer fire department or the chief's designee.

Personal injuries sustained by basic emergency medical care providers, as defined in section 147.1, or by advanced emergency medical care providers as defined in section 147A.1, arise in the course of employment if the injuries are sustained at any time from the time the emergency medical care providers are summoned to duty until the time those duties have been fully discharged.

FIRE CHIEF AUTHORITY AT AN EMERGENCY

(Iowa Code excerpts)

100B.1 (SF140) Definition

1. As used in this chapter, "fire department" means the fire department of a city, township, or benefited fire district.

100B.2 Authority at Fires and Other Emergencies

2. A fire chief or other authorized officer of a fire department who is in charge of a fire scene or other emergency scene which involves the protection of life or property, may direct an operation as necessary to extinguish or control a fire, perform a rescue operation, investigate the existence of a suspected or reported fire, gas leak, or other hazardous condition, or take any other action as deemed necessary in the reasonable performance of the department's duties. In exercising this power, a fire chief may prohibit an individual vehicle, or vessel from approaching a fire or emergency scene and may remove from the scene any object, vehicle, or vessel which may impede or interfere with the operations of the fire department. The fire chief may remove from the scene any individual who is not usefully employed in extinguishing a fire, the resolution of an emergency, or the preservation of property.

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100B.3 Authority to Barricade

3. The fire chief or other authorized officer of the fire department in charge of a fire or emergency scene may place or erect ropes, guards, barricades, or instructions across a street, alley, or private property near the location of the fire or emergency so as to prevent accidents or interference with the fire fighting efforts of the fire department, to control the scene until any required investigation is complete, or to preserve evidence related to the fire or other emergency.

100B.4 Traffic Control

4. Notwithstanding a contrary provision of this chapter, if a peace officer is on the scene, the peach officer is in charge of traffic control and a peace officer shall not be prohibited from performing the duties of a peace officer at the fire scene.

100B.5 Penalty

5. A person who disobeys an order of a fire chief, other officer of a fire department, or peace officer assisting the fire department which is issued pursuant to section 100B.2 or 100B.3, is guilty of a simple misdemeanor.

This bill provides that the fire chief or other authorized officer of a fire department may take charge of a fire or other emergency scene and keep persons, vehicles, or vessels from interfering with the fire fighting activities or the resolution of the emergency. The fire chief may also secure by ropes, barricades, guards, or other obstructions, streets, alleys, or private property near fire scene or emergency scene to preserve evidence to facilitate investigation, or to assist in the control and management of a fire or emergency scene.

A violator is guilty of a simple misdemeanor which is punishable by a fine of not more than one hundred dollars or imprisonment for not more than thirty days.

DEPARTMENT OF PUBLIC HEALTH'S DUTIES REGARDING AIDS

(Iowa Code excerpts)

135.11(72GA, SF2157)

(23) Adopt rules which require all emergency medical services personnel, fire fighters, and law enforcement personnel to complete a minimum of two hours of training concerning acquired immune deficiency syndrome-related conditions and the prevention of human immunodeficiency virus infection.

135.40 Collection and distribution of information.

Any person, hospital, sanatorium, nursing or rest home or other organization may provide information, interviews, reports, statements, memoranda, or other data relating to the condition and treatment of any person to the department, the Iowa medical society or any of its allied medical societies or the Iowa osteopathic medical association or any in-hospital staff committee, to be used in the course of any study for the purpose of reducing morbidity or mortality, and no liability of any kind or character for damages or other relief shall arise or be enforced against any person or organization by reason of having provided such information or material, or by reason of having released or published the findings or conclusions of such groups to advance medical research and medical education, or by reason of having released or published generally a summary of such studies.

135.41 Publication

The department, Iowa medical society or any of its allied medical societies or the Iowa osteopathic medical association or any in-hospital staff committee shall use or publish said material only for the purpose of advancing medical research or medical education in the interest of reducing morbidity or mortality, except that a summary of such studies may be released by any such group for general publication. In all events the identity of any person whose condition or treatment has been studied shall be confidential and shall not be revealed under any circumstance. A violation of this section shall constitute a simple misdemeanor.

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135.42 Unlawful use.

All information, interviews, reports, statements, memoranda, or other data furnished in accordance with this division and any findings or conclusions resulting from such studies shall not be used or offered or received in evidence in any legal proceedings of any kind or character, but nothing contained herein shall be construed as affecting the admissibility as evidence of the primary medical or hospital records pertaining to the patient or of any other writing, record or reproduction thereof not contemplated by this division.

135H.10 (72GA, SF 2157) Confidential Reports and Immunities

1. Reports, information, and records submitted and maintained pursuant to this chapter are strictly confidential medical information. The information shall not be released, shared with an agency or institution, or made public upon subpoena, search warrant, discovery proceedings, or by any other means except under any of the following circumstances:

a. Release may be made of medical or epidemiological information for statistical purposes in a manner such that no individual person can be identified.

b. Release may be made of medical or epidemiological information to the extent necessary to enforce the provisions of this chapter and related rules concerning the treatment, control, and investigation of human immunodeficiency virus infection by public health officials.

c. Release may be made of medical or epidemiological information to medical personnel in a medical emergency to the extent necessary to protect the health or life of the named party.

2. An officer or employee of the state or local department of health or a person making a report pursuant to this chapter shall not be examined in any judicial, executive, legislative, or other proceeding as to the existence or content of an individual report made pursuant to this chapter.

3. Reports, information, and records which contain the identity of persons except reports, information, and records necessary to honor the requests made pursuant to section 135H.8 shall be destroyed immediately after the extraction of statistical data and completion of contact identification or in no event longer than six months from the date the report, information, or record was received.

4. A person making a report in good faith pursuant to this chapter is immune from any liability, civil or criminal, which might otherwise be incurred or imposed as a result of the report.

5. For purposes of this section, "good faith" means objectively reasonable, and not in violation of clearly established statutory rights or other rights of a person which a reasonable person would know or should have known.

135I.3 (72GA, SF2294) Confidentiality of Records.

1. A person possessing information regulated by this chapter shall not disclose the identity of any other person upon whom an HIV-related test is performed or the results of such a test in a manner which permits identification of the subject of the test, except to any of the following persons:

a. The subject of the test or the subject's legal guardian subject to the provisions of section 135I.2, subsection 6, when applicable.

b. Any person who secures a written release of test results executed by the subject of the test or the subject's legal guardian.

c. An authorized agent or employee of a health facility or health care provider if the health facility or health care provider ordered or participated in the testing or is otherwise authorized to obtain the test results, the agent or employee provides patient care or handles or processes specimens of body fluids or tissues, and the agent or employee has a medical need to know such information.

d. Licensed medical personnel providing care to the subject of the test, when knowledge of the test results is necessary to provide care or treatment.

135I.4 (72GA, SF2294)

1. A person who violates a provision of section 135I.2 or 135I.3, is subject to a civil penalty not to exceed one thousand dollars for each violation. Civil penalties collected pursuant to this subsection shall be forwarded to the treasurer of the state for deposit in the general fund of the state.

2. A person aggrieved by a violation of this chapter shall have a right of action for damages in district court.

AIDS
(Iowa Code excerpts)

141.1 Lead agency.
The Iowa department of public health is designated as the lead agency in the coordination and implementation of the state comprehensive acquired immune deficiency syndrome (AIDS)-related conditions prevention and intervention plan. As used in this subchapter, *"acquired immune deficiency syndrome-related conditions"* or *"AIDS-related conditions"* means human immunodeficiency virus, acquired immune deficiency syndrome, acquired immune deficiency syndrome-related complex, or any other condition resulting from the human immunodeficiency virus infection.

141.3 Public and professional education

1. The Iowa department of public health shall, in cooperation with the department of education and other agencies, organizations, coalitions, and local health departments, develop and implement a program of public and professional AIDS-related education.

2. The program of public and professional AIDS-related education shall include the following components:

a. Pertinent AIDS-related conditions information directed toward individuals who are at risk for an AIDS-related condition.

b. Pertinent AIDS-related conditions information directed toward all providers of health care.

c. Pertinent AIDS-related conditions information directed toward the general pubic.

141.6-Partner notification program - human immunodeficiency virus (HIV) - crime.

1. The Iowa department of public health shall implement, as a part of the comprehensive AIDS prevention and intervention plan, a partner notification program for persons known to have tested positive for the human immunodeficiency virus infection, beginning September 1, 1988.

2. The Iowa department of public health shall initiate the program at alternative testing and counseling sites and at sexually transmitted disease clinics.

3. In administering the program, the Iowa department of public health shall provide for the following:

a. A person who tests positive for the human immunodefiency virus infection shall receive posttest counseling, during which time the person shall be encouraged on a strictly confidential basis to refer for counseling and human immunodeficiency virus testing any person with whom the person has had sexual relations or has shared intravenous equipment.

b. If, following counseling, a person who tests positive for the human immunodeficiency virus infection chooses to disclose the identity of any sexual partners or persons with whom the person has shared intravenous equipment, the physician or health practitioner attending the person shall obtain written consent which acknowledges that the person is making the disclosure voluntarily.

c. The physician or health practitioner attending the person shall forward any written consent forms to the Iowa department of public health.

d. Devise a procedure, as a part of the partner notification program, to provide for the notification of an identifiable third party who is a sexual partner of or who shares intravenous equipment with a person who has tested positive for the human immunodeficiency virus, by the department or a physician, when all of the following situations exist:

(1) A physician for the infected person is of the good faith opinion that the nature of the continuing contact poses an imminent danger of human immunodeficiency virus infection transmission to the third party.

(2) When the physician believes in good faith that the infected person, despite strong encouragement, has not and will not warn the third party and will not participate in the voluntary partner notification program.

Notwithstanding subsection 4, the department or physician may reveal the identity of a person who has tested positive for the human immunodeficiency virus infection pursuant this subsection only to the extent necessary to protect a third party from the direct threat of transmission. Notification of a person pursuant to this paragraph is subject to the disclosure provisions of section 141.23, subsection 3. This subsection shall not be interpreted to create a duty to warn third parties of the danger of exposure to human immunodeficiency virus through contact with a person who tests positive for the human immunodeficiency virus infection.

Prior to notification of a third party, the physician proposing to cause the notification to be made shall make reasonable efforts to inform, in writing, the person who has tested positive for the human immunodeficiency virus infection. The written information shall state that due to the nature of the person's continuing contact with a third party, the physician is forced to take action to provide notification to the third party. The physician, when reasonably possible, shall provide the following information to the person who has tested positive for the human immunodeficiency virus infection:

(a) The nature of the disclosure and the reason for the disclosure.
(b) The anticipated date of disclosure.
(c) The name of the party or parties to whom disclosure is to be made.

The department shall adopt rules pursuant to chapter 17A to implement this paragraph. The rules shall provide a detailed procedure by which the department or a physician may directly notify an endangered third party.

4. In making contact the Iowa department of public health shall not disclose the identity of the person who provided the names of the persons to be contacted and shall protect the confidentiality of persons contacted.

5. The Iowa department of public health may delegate its partner notification duties under this section to local health authorities unless the local authority refuses or neglects to conduct the contact tracing program in a manner deemed to be effective by the Iowa department of public health.

6. A person who violates a confidentiality requirement of subsection 1, 2, 3, 4, or 5 is guilty of a class "D" felony.

141.9 Duties of public health officials.

1. State and local health officers shall investigate sources of human immunodeficiency virus infection and shall use every appropriate means to prevent the spread of the disease.

2. The Iowa department of public health shall do all of the following:

a. Provide consultation to agencies and organizations regarding appropriate policies for testing, education, confidentiality, and infection control.

b. Conduct health information programs for the public relating to human immunodeficiency virus infection, including information about how the infection is transmitted and can be prevented. The department shall prepare, for free distribution, printed information relating to human immunodeficiency virus infection and prevention.

c. Provide educational programs concerning human immunodeficiency virus infection in the work-place.

d. Develop and implement human immunodeficiency virus education risk-reduction programs for specific populations at high risk for infection.

e. In cooperation with the department of education, develop and update a medically correct acquired immune deficiency syndrome prevention curriculum for use at the discretion of secondary and middle schools.

School districts shall provide every elementary and secondary school student, with parental consent, education concerning human immunodeficiency virus infection and acquired immune deficiency syndrome and its prevention.

141.10 Confidential reports and immunities.

1. Reports, information, and records submitted and maintained pursuant to this subchapter are strictly confidential medical information. The information shall not be released, shared with an agency or institution, or made public upon subpoena, search warrant, discovery proceedings, or by any other means except under any of the following circumstances:

a. Release may be made of medical or epidemiological information for statistical purposes in a manner such that no individual person can be identified.

b. Release may be made of medical or epidemiological information to the extent necessary to enforce the provisions of this subchapter and related rules concerning the treatment, control, and investigation of human immunodeficiency virus infection by public health officials.

c. Release may be made of medical or epidemiological information to medical personnel in a medical emergency to the extent necessary to protect the health or life of the named party.

d. Release may be made of test results concerning a patient pursuant to procedures established under section 141.6, subsection 3, paragraph "d".

2. An officer or employee of the state or local department of health or a person making a report pursuant to this subchapter shall not be examined in any judicial, executive, legislative, or other proceeding as to the existence or content of an individual report made pursuant to this subchapter.

3. Reports, information, and records which contain the identity of persons except reports, information, and records necessary to honor the requests made pursuant to section 141.8 shall be destroyed immediately after the extraction of statistical data and completion of contact identification or in no event longer than six months from the date the report, information, or record was received.

4. A person making a report in good faith pursuant to this subchapter is immune from any liability, civil or criminal, which might otherwise be incurred or imposed as a result of the report.

5. For purposes of this section, *"good faith"* means objectively reasonable, and not in violation of clearly established statutory rights or other rights of a person which a reasonable person would know or should have known.

A physician or health care practitioner attending a person who tests positive for the human immunodeficiency virus infection has no duty to disclose to or to warn third parties of the dangers of exposure to human immunodeficiency virus infection through contact with that person and is immune from any liability, civil or criminal, for failure to disclose to or warn third parties of the condition of that person.

141.11 through 141.20 Reserved.

141.21 Definitions.

As used in this subchapter, unless the context otherwise requires:
1. "AIDS" means acquired immune deficiency syndrome as defined by the centers for disease control of the United States department of health and human services.
2. "ARC" means an AIDS-related complex as defined by the centers for disease control of the United States department of health and human services.
3. *"Department"* means the Iowa department of public health.
4. *"Health care provider"* means a person providing health care services of any kind.
5. *"Health facility"* means a hospital, health care facility, clinic, blood bank, blood center, sperm bank, laboratory organ transplant center and procurement agency, or other health care institution.
6. *"HIV"* means the human immunodeficiency virus identified as the causative agent of AIDS.
7. *"HIV-related test"* means a test for the antibody or antigen to HIV.
8. *"Legal guardian"* also means a person appointed by a court pursuant to chapter 633. In the case of a minor, *"legal guardian"* also means a parent or other person responsible for the care of the minor.
9. *"Release of test results"* means a written authorization for disclosure of HIV-related test results which is signed and dated, and which specifies to whom disclosure is authorized and the time period during which the release is to be effective.

141.22 Testing.

1. Prior to withdrawing blood for the purpose of performing an HIV-related test, the subject of the test or the subject's legal guardian, except when the provisions of subsection 6 apply, shall be provided with preliminary counseling which shall include but is not limited to the following:

a. An explanation of the test, including the test's purposes, potential uses, limitations, and the meaning of both positive and negative results.

b. An explanation of the nature of AIDS and ARC, including the relationship between the test results and the diseases.

c. An explanation of the procedures to be followed, including the fact that the test is entirely voluntary and can be performed anonymously if requested.

d. Information concerning behavioral patterns known to expose a person to the possibility of contracting AIDS and methods for minimizing the risk of exposure.

2. A person seeking an HIV-related test shall have the right to remain anonymous. A health care provider shall provide for the anonymous administration of the test at the subject's request or shall confidentially refer the subject to a site which provides anonymous testing.

3. At any time that a subject is informed of test results, counseling concerning the emotional and physical health effects shall be initiated. Particular attention shall be given to explaining the need for the precautions necessary to avoid transmitting the virus. The subject shall be given information concerning additional counseling. Any additional testing that is advisable shall be explained to the subject and arrangements for the testing shall be made.

4. Prior to withdrawing blood for the purpose of performing an HIV-related test, the subject shall be given written notice of the provisions of this section and of section 141.6, subsection 3, paragraph "d".

5. Notwithstanding subsections 1 through 4, the provisions of this section do not apply to any of the following:

a. The performance by a health care provider or health facility of an HIV-related test when the health care provider or health facility procures, processes, distributes, or uses a human body part donated for a purpose specified under the Uniform Anatomical Gift Act, or semen provided prior to July 1, 1988, for the purpose of artificial insemination, or donations of blood, and such test is necessary to assure medical acceptability of such gift or semen for the purposes intended.

b. The performance of an HIV-related test by licensed medical personnel in medical emergencies when the subject of the test is unable to grant or withhold consent, and the test results are necessary for medical diagnostic purposes to provide appropriate emergency care or treatment, except that post-test counseling shall be required.

c. A person engaged in the business of insurance who is subject to section 505.16.

6. A person may apply for voluntary treatment, contraceptive services, or screening or treatment for AIDS and other sexually transmitted diseases, directly to a licensed physician and surgeon, an osteopathic physician and surgeon, or a family planning clinic. Notwithstanding any other provision of law, if the person seeking the treatment is a minor who has personally made application for services, screening, or treatment, the fact that the minor sought services or is receiving services, screening, or treatment shall not be reported or disclosed, except for statistical purposes. Notwithstanding any other provision of law, however, the minor shall be informed prior to testing that upon confirmation according to prevailing medical technology of a positive test result the minor's legal guardians required to be informed by the testing facility. Testing facilities where minors are tested shall have available a program to assist minors and legal guardians with the notification process which emphasizes the need for family support and assists in making available the resources necessary to accomplish that goal. However, a testing facility which is precluded by federal statute, regulation, or center for disease control guidelines, from informing the legal guardian is exempt from the notification requirement, but not from the requirement for an assistance program. The minor shall give written consent to these procedures and to receive the services, screening, or treatment. Such consent is not subject to later disaffirmance by reason of minority.

7. When submitted the department shall review and approve pamphlets containing the information required to be provided to a subject or the subject's legal guardian pursuant to subsection 1. The department shall also prepare a model pamphlet containing this information. This subsection does not require submission of all pamphlets containing the required information to the department for approval.

141.23 Confidentiality of records.

1. A person possessing information regulated by this chapter shall not disclose the identity of any other person upon whom an HIV-related test is performed or the results of such a test in a manner which would permit identification of another person and a person shall not be compelled to disclose the identity of any person upon whom an HIV-related test is performed, or the results of the test in a manner which permits identification of the subject of the test, except to any of the following persons:

a. The subject of the test or the subject's legal guardian subject to the provisions of section 141.22, subsection 6, when applicable.

b. Any person who secures a written release of test results executed by the subject of the test or the subject's legal guardian.

c. An authorized agent or employee of a health facility or health care provider if the health facility or health care provider ordered or participated in the testing or is otherwise authorized to obtain the test results, the agent or employee provides patient care or handles or processes specimens of body fluids or tissues, and the agent or employee has a medical need to know such information.

d. Licensed medical personnel providing care to the subject of the test, when knowledge of the test results is necessary to provide care or treatment.

e. The department in accordance with reporting requirements for an HIV-related condition.

f. A health facility or health care provider which procures, processes, distributes, or uses a human body part from a deceased person with respect to medical information regarding that person, or semen provided prior to July 1, 1988, for the purpose of artificial insemination.

g. A person allowed access to a record by a court order which is issued in compliance with the following provisions:

(1) There is a court finding that the person seeking the test results has demonstrated a compelling need for the test results which cannot be accommodated by other means. In assessing compelling need, the court shall weigh the need for disclosure against the privacy interest of the test subject and the public interest which may be disserved by disclosure due to its deterrent effect on future testing or due to its effect in leading to discrimination.

(2) Pleadings pertaining to disclosure of test results shall substitute a pseudonym for the true name of the subject of the test. The disclosure to the parties of the subject's true name shall be communicated confidentially, in documents not filed with the court.

(3) Before granting an order, the court shall provide the person whose test results are in question with notice and a reasonable opportunity to participate in the proceedings if the person is not already a party.

(4) Court proceedings as to disclosure of test results shall be conducted in camera unless the subject of the test agrees to a hearing in open court or unless the court determines that a public hearing is necessary to the public interest and the proper administration of justice.

(5) Upon the issuance of an order to disclose test results, the court shall impose appropriate safeguards against unauthorized disclosure, which shall specify the persons who may gain access to the information, the purposes for which the information shall be used, and appropriate prohibitions on future disclosure.

h. An employer, if the test is authorized to be required under any other provision of law.

2. A person to whom the results of an HIV-related test have been disclosed pursuant to subsection 1 shall not disclose the test results to another person except as authorized by subsection 1, or by a court order issued pursuant to subsection 1.

3. If disclosure is made pursuant to this section, the disclosure shall be accompanied by a statement in writing which includes the following or substantially similar language: "This information has been disclosed to you from records whose confidentiality is protected by state law. State law prohibits you from making any further disclosure of the information without the specific written consent of the person to whom it pertains, or as otherwise permitted by law. A general authorization for the release of medical or other information is not sufficient for this purpose." An oral disclosure shall be accompanied or followed by such a notice within ten days.

141.23A--Emergency Responder Testing Program.

If a person in the course of responding to an emergency renders aid to an injured person and becomes exposed to bodily fluids of the injured person, that emergency responder shall be entitled to HIV testing in accordance with the latest available medical technology to determine if infection with the human immunodeficiency virus has occurred. The costs of the test shall be paid for through the expenditure of funds appropriated to the department for AIDS-related activities.

141.24--Remedies and penalties.

1. A person who violates a provision of section 141.22 or 141.23, is subject to a civil penalty not to exceed one thousand dollars for each violation. Civil penalties collected pursuant to this subsection shall be forwarded to the treasurer of the state for deposit in the general fund of the state.

2. A person aggrieved by a violation of this subchapter shall have a right of action for damages in district court.

3. An action under this subchapter is barred unless the action is commenced within two years after the cause of action accrues.

4. The attorney general may maintain a civil action to enforce this subchapter.

5. This subchapter does not limit the rights of the subject of an HIV-related test to recover damages or other relief under any other applicable law.

6. This subchapter shall not be construed to impose civil liability or criminal sanction for disclosure of HIV-related test results in accordance with any reporting requirement for a diagnosed case of AIDS or a related condition by the department or the centers for disease control of the United States public health service.

141.25 Rules for enforcement - contagious and infectious diseases.

The department shall adopt rules pursuant to chapter 17A to implement and enforce this subchapter. The rules may include procedures for taking appropriate action with regard to health facilities or health care providers which violate this subchapter or the rules adopted pursuant to this subchapter.

The department shall adopt rules pursuant to chapter 17A which require that if a health care provider attending a person prior to the person's death determines that the person suffered from or was suspected of suffering from a contagious or infectious disease, the health care provider shall place with the remains written notification of the condition for the information of any person handling the body of the deceased person subsequent to the person's death.

The department, in cooperation with the department of public safety, and persons who represent those who attend dead bodies shall establish for all emergency medical providers including paramedics, ambulance personnel, physicians, nurses, hospital personnel, first responders, peace officers, or firefighters, who provide emergency care services to a person, and shall establish for all persons who attend dead bodies, protocol and procedures for the use of universal precautions to prevent the transmission of contagious and infectious diseases.

LIFE-SUSTAINING PROCEDURES

(Iowa Code excerpts)

144A.7 Procedure in absence of declaration.

1. Life-sustaining procedures may be withheld or withdrawn from a patient who is in a terminal condition and who is comatose, incompetent, or otherwise physically or mentally incapable of communication and has not made a declaration in accordance with this chapter if there is consultation and written agreement for the withholding or the withdrawal of life-sustaining procedures between the attending physician and any of the following individuals, who shall be guided by the express or implied intentions of the patient, in the following order of priority if no individual in a prior class is reasonably available, willing, and competent to act:

a. The attorney in fact designated to make treatment decisions for the patient should such person be diagnosed as suffering from a terminal condition, if the designation is in writing and complies with section 633.705.

b. The guardian of the person of the patient if one has been appointed, provided court approval is obtained in accordance with section 633.635, subsection 2, paragraph "c". This paragraph does not require the appointment of a guardian in order for a treatment decision to be made under this section.

c. The patient's spouse.

d. An adult child of the patient or, if the patient has more than one adult child, a majority of the adult children who are reasonably available for consultation.

e. A parent of the patient, or parents if both are reasonably available.

f. An adult sibling.

2. When a decision is made pursuant to this section to withhold or withdraw life-sustaining procedures, there shall be a witness present at the time of the consultation when that decision is made.

3. Subsections 1 and 2 shall not be in effect for a patient who is known to the attending physician to be pregnant with a fetus that could develop to the point of live birth with continued application of life-sustaining procedures. However, the provisions of this subsection do not impair any existing rights or responsibilities that any person may have in regard to the withholding or withdrawal of life-sustaining procedures.

BASIC EMERGENCY MEDICAL CARE

(Iowa Code excerpts)

147.1 Definitions.

For the purposes of this and the following chapters of this title:

4. *"Department"* shall mean the Iowa department of public health.

7. *"Basic emergency medical care provider"* means a first responder, emergency rescue technician, or emergency medical technician-ambulance as defined in section 147.1, subsections 9, 10 and 11.

9. *"First responder"* means an individual trained in patient-stabilizing techniques, through the use of initial basic emergency medical care procedures and skills prior to the arrival of an ambulance or rescue squad, pursuant to rules established by the department, and who is currently certified as a first responder by the department.

10. *"Emergency rescue technician"* means an individual trained in various rescue techniques including rescue from heights and depths, extrication from automobiles, agricultural rescue, and rescue from water and special hazards, pursuant to rules established by the department, and who is currently certified as an emergency rescue technician by the department.

11. *"Emergency medical technician-ambulance"* means an individual trained in patient assessment, the recognition of signs and symptoms regarding illness or injury, and the use of proper procedures when rendering basic emergency medical care, pursuant to rules established by the department, and who is currently certified as an emergency medical technician-ambulance by the department.

147.161 Training and certification of first responders, emergency rescue technicians, and emergency medical technicians-ambulance.

The department shall establish rules pursuant to this chapter for the training and certification of first responders, emergency rescue technicians, and emergency medical technicians-ambulance as defined under section 147.1.

BASIC EMERGENCY MEDICAL CARE

(Also see Iowa Administrative Code 641—Chapter 131)

ADVANCED EMERGENCY MEDICAL CARE

(Entire Statute)

147A.1 Definitions.

As used in this chapter, unless the context otherwise requires:

1. *"Advanced emergency medical care"* means such medical procedures as:

a. Administration of intravenous solutions.

b. Intubation.

c. Performance of cardiac defibrillation and synchronized cardioversion.

d. Administration of emergency drugs as provided by rule by the board.

e. Any other medical procedure approved by the board, by rule, as appropriate to be performed by advanced emergency medical care providers who have been trained in that procedure.

2. *"EMT"* is an abbreviation used in lieu of the term "emergency medical technician".

3. *"Advanced emergency medical care provider"* means an individual trained to provide advanced emergency medical care at the first-responder-defibrillation, EMT-defibrillation, EMT-intermediate, EMT-paramedic level or other certification levels adopted by rule by the board, who has been issued a certificate by the board.

4. *"Director"* means the director of the Iowa department of public health.

5. *"Department"* means the Iowa department of public health.

6. *"Board"* means the board of medical examiners appointed pursuant to section 147.14, subsection 2.

7. *"Physician"* means an individual licensed under chapter 148, 150, or 150A.

147A.2 Council established - terms of office.

Repealed

147A.3 Meetings of the council - quorum - expenses.

Repealed

147A.4 Rulemaking authority.

1. The department shall adopt rules required or authorized by this chapter pertaining to the operation of ambulance, rescue, and first response services which have received authorization under section 147A.5 to utilize the services of certified advanced emergency medical care providers. These rules shall include, but need not be limited to, requirements concerning physician supervision, necessary equipment and staffing, and reporting by ambulance, rescue, and first response services which have received the authorization pursuant to section 147A.5.

2. The board shall adopt rules required or authorized by this chapter pertaining to the examination and certification of advanced emergency medical care providers. These rules shall include, but need not be limited to, requirements concerning prerequisites, training, and experience for advanced emergency medical care providers and procedures for determining when individuals have met these requirements.

The board shall establish the fee for the examination of the advanced emergency medical care providers to cover the administrative costs of the examination program.

147A.5 Applications for advanced emergency medical care services - approval - denial, probation, suspension or revocation.

1. An ambulance, rescue, or first response service in this state that desires to provide advanced emergency medical care in the prehospital setting, shall apply to the department for authorization to establish a program utilizing certified advanced emergency medical care providers for delivery of the care at the scene of an emergency, during transportation to a hospital, or while in the hospital emergency department, and until care is directly assumed by a physician or by authorized hospital personnel.

2. The department shall approve an application submitted in accordance with subsection 1 when the department is satisfied that the program proposed by the application will be operated in compliance with this chapter and the rules adopted pursuant to this chapter.

3. The department may deny an application for authorization to establish a program utilizing the services of certified advanced emergency medical care providers, or may place on probation, suspend, or revoke existing authorization if the department finds reason to believe the program has not been or will not be operated in compliance with this chapter and the rules adopted pursuant to this chapter, or that there is insufficient assurance of adequate protection for the public. The denial or period of probation, suspension, or revocation shall be effected and may be appealed as provided by section 17A.12.

147A.6 Advanced Emergency Medical Care Provider Certificates - renewal.

1. The board, upon application and receipt of the prescribed fee, shall issue a certificate attesting to the qualifications of an individual who has met all of the requirements for advanced emergency medical care provider certification established by the rules adopted under section 147A.4, subsection 2.

2. Advanced emergency medical care provider certificates are valid for the multiyear period determined by the board, unless sooner suspended or revoked. The certificate shall be renewed upon application of the holder and receipt of the prescribed fee if the holder has satisfactorily completed continuing medical education programs as required by rule.

147A.7 Denial, suspension or revocation of certificates - hearing - appeal.

1. The board may deny an application for issuance or renewal of an advanced emergency medical care provider certificate, or suspend or revoke the certificate when it finds that the applicant or certificate holder is guilty of any of the following acts or offenses:

a. Negligence in performing authorized services.

b. Failure to follow the directions of the supervising physician.

c. Rendering treatment not authorized under this chapter.

d. Fraud in procuring certification.

e. Professional incompetency.

f. Knowingly making misleading, deceptive, untrue or fraudulent representation in the practice of a profession or engaging in unethical conduct or practice harmful or detrimental to the public. Proof of actual injury need not be established.

g. Habitual intoxication or addiction to the use of drugs.

h. Fraud in representations as to skill or ability.

i. Willful or repeated violations of this chapter or of rules adopted pursuant to this chapter.

j. Violating a statute of this state, another state, or the United States, without regard to its designation as either a felony or misdemeanor, which relates to the practice of an advanced emergency medical care provider. A copy of the record of conviction or plea of guilty is conclusive evidence of the violation.

k. Having certification to practice as an advanced emergency medical care provider revoked or suspended, or having other disciplinary action taken by a licensing or certifying authority of another state, territory, or country. A certified copy of the record or order of suspension, revocation, or disciplinary action is conclusive or prima facie evidence.

2. A determination of mental incompetence by a court of competent jurisdiction automatically suspends a certificate for the duration of the certificate unless the board orders otherwise.

3. A denial, suspension or revocation under this section shall be effected, and may be appealed in accordance with the rules of the board established pursuant to chapter 258A.

147A.8 Authority of certified advanced emergency medical care provider.

An advanced emergency medical care provider properly certified under this chapter may:

1. Render advanced emergency medical care, rescue, and lifesaving services in those areas for which the advanced emergency medical care provider is certified, as defined and approved in accordance with the rules of the board, at the scene of an emergency, during transportation to a hospital or while in the hospital emergency department, and until care is directly assumed by a physician or by authorized hospital personnel.

2. Function in any hospital when:

a. Enrolled as a student or participating as a preceptor in a training program approved by the board; or

b. Fulfilling continuing education requirements as defined by rule; or

c. Employed by or assigned to a hospital as a member of an authorized ambulance, rescue, or first response service, by rendering lifesaving services in the facility in which employed or assigned pursuant to the advanced emergency medical care provider's certification and under the direct supervision of a physician or registered nurse. An advanced emergency medical care provider shall not routinely function without the direct supervision of a physician or registered nurse. However, when the physician or registered nurse cannot directly assume emergency care of the patient, the advanced emergency medical care provider may perform without direct supervision advanced emergency medical care procedures for which that individual is certified if the life of the patient is in immediate danger and such care is required to preserve the patient's life; or

d. Employed by or assigned to a hospital as a member of an authorized ambulance, rescue, or first response service to perform non-lifesaving procedures for which those individuals have been trained and are designated in a written job description. Such procedures may be performed after the patient is observed by and when the advanced emergency medical care provider is under the supervision of the physician or registered nurse and where the procedure may be immediately abandoned without risk to the patient.

147A.9 Remote supervision of advanced emergency medical care providers - emergency communication failure - authorization of immediate lifesaving procedures.

1. When voice contact or a telemetered electrocardiogram is monitored by a physician or physician's designee, and direct communication is maintained, an advanced emergency medical care provider may upon order of the monitoring physician or upon standing orders of a physician transmitted by the monitoring physician's designee perform any advanced emergency medical care procedure for which that advanced emergency medical care provider is certified.

2. If communications fail during an emergency situation, the advanced emergency medical care provider may perform any advanced emergency medical care procedure for which that individual is certified and which is included in written protocols if in the judgment of the advanced emergency medical care provider the life of the patient is in immediate danger and such care is required to preserve the patient's life.

3. The board shall adopt rules to authorize the institution of lifesaving procedures in accordance with written protocols in instances where the establishment of communication in lieu of immediate action may cause patient harm or death.

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147A.10 Exemptions from liability in certain circumstances.

1. A physician or physician's designee who gives orders, either directly or via communication equipment from some other point, to an appropriately certified advanced emergency medical care provider at the scene of an emergency, and an appropriately certified advanced emergency medical care provider following the orders, are not subject to criminal liability by reason of having issued or executed the orders, and are not liable for civil damages for acts or omissions relating to the issuance or execution of the orders unless the acts or omissions constitute recklessness.

2. A physician, physician's designee, or advanced emergency medical care provider shall not be subject to civil liability solely by reason of failure to obtain consent before rendering emergency medical, surgical, hospital or health services to any individual, regardless of age, when the patient is unable to give consent for any reason and there is no other person reasonably available who is legally authorized to consent to the providing of such care.

3. An act of commission or omission of any appropriately certified advanced emergency medical care provider while rendering advanced emergency medical care under the responsible supervision and control of a physician to a person who is deemed by them to be in immediate danger of serious injury or loss of life, shall not impose any liability upon the certified advanced emergency medical care provider, the supervising physician, or any hospital, or upon the state, or any county, city or other political subdivision, or the employees of any of these entities; provided that this section shall not relieve any person of liability for civil damages for any act of commission or omission which constitutes recklessness.

147A.11 Prohibited acts.

1. Any person not certified as required by this chapter who claims to be an advanced emergency medical care provider, or who uses any other term to indicate or imply that the person is an advanced emergency medical care provider, or who acts as an advanced emergency medical care provider without having obtained the appropriate certificate under this chapter, is guilty of a class "D" felony.

2. An owner of an unauthorized ambulance, rescue, or first response service in this state who operates or purports to operate an authorized ambulance, rescue, or first response service, or who uses any term to indicate or imply such authorization without having obtained the appropriate authorization under this chapter is guilty of a class "D" felony.

3. Any person who imparts or conveys, or causes to be imparted or conveyed, or attempts to impart or convey false information concerning the need for assistance of an ambulance, rescue, or first response service or of any personnel or equipment thereof, knowing such information to be false, is guilty of a serious misdemeanor.

147A.12 Registered nurse exception.

1. This chapter does not restrict a registered nurse, licensed pursuant to chapter 152, from staffing an authorized ambulance, rescue, or first response service provided the registered nurse can document equivalency through education and additional skills training essential in the delivery of prehospital emergency care. The equivalency shall be accepted when:

a. Documentation has been reviewed and approved at the local level by the medical director of the ambulance, rescue, or first response service in accordance with the rules of the board of nursing developed jointly with the board of medical examiners.

b. Authorization has been granted to that ambulance, rescue, or first response service by the department.

2. Section 147A.10 applies to a registered nurse in compliance with this section.

ADVANCED EMERGENCY MEDICAL CARE

(Also see Iowa Administrative Code 641–Chapter 132)

CHILD ABUSE REPORTING

(Iowa Code excerpt)

232.68 Definitions

As used in sections 232.67 through 232.77 and 235A.12 through 235A.23, unless the context otherwise requires:

1. *"Child"* means any person under the age of eighteen years.

2. *"Child abuse"* or *"abuse"* means harm or threatened harm occurring through:

a. Any nonaccidental physical injury, or injury which is at variance with the history given of it, suffered by a child as the result of the acts or omissions of a person responsible for the care of the child.

b. The commission of a sexual offense with or to a child pursuant to chapter 709, section 726.2, or section 728.12, subsection 1, as a result of the acts or omissions of the person responsible for the care of the child. Notwithstanding section 702.5, the commission of a sexual offense under this paragraph includes any sexual offense referred to in this paragraph with or to a person under the age of eighteen years.

c. The failure on the part of a person responsible for the care of a child to provide for the adequate food, shelter, clothing or other care necessary for the child's health and welfare when financially able to do so or when offered financial or other reasonable means to do so. A parent or guardian legitimately practicing religious beliefs who does not provide specified medical treatment for a child for that reason alone shall not be considered abusing the child, however this provision shall not preclude a court from ordering that medical service be provided to the child where the child's health requires it.

d. The acts or omissions of a person responsible for the care of a child which allow, permit, or encourage the child to engage in acts prohibited pursuant to section 725.1. Notwithstanding section 702.5, acts or omissions under this paragraph include an act or omission referred to in this paragraph with or to a person under the age of eighteen years.

3. *"Department"* means the state department of human services and includes the local, county and regional offices of the department.

4. *"Health practitioner"* includes a licensed physician and surgeon, osteopath, osteopathic physician and surgeon, dentist, optometrist, podiatrist or chiropractor; a resident or intern in any of such professions; a licensed dental hygienist, a registered nurse or licensed practical nurse; and a basic emergency medical care provider certified under section 147.161 or an advanced emergency medical care provider certified under section 147A6..

5. *"Registry"* means the central registry for child abuse information established in section 235A.14.

6. *"Person responsible for the care of a child"* means:

a. A parent, guardian, or foster parent.

b. A relative or any other person with whom the child resides, without reference to the length of time or continuity of such residence.

c. An employee or agent of any public or private facility providing care for a child, including an institution, hospital, health care facility, group home, mental health center, residential treatment center, shelter care facility, detention center, or child care facility.

232.69 Mandatory and permissive reporters-training required.

1. The following classes of persons shall make a report within twenty-four hours and as provided in section 232.70, of cases of child abuse.

a. Every health practitioner who in the scope of professional practice, examines, attends, or treats a child and who reasonably believes the child has been abused. Notwithstanding section 140.3, this provision applies to a health practitioner who receives information confirming that a child is infected with a sexually transmitted disease.

b. Every self-employed social worker, every social worker under the jurisdiction of the department of human services, any social worker employed by a public or private agency or institution, public or private health care facility as defined in section 135C.1, certified psychologist, certificated school employee, employee or operator of a licensed child care center or registered group day care home or registered family day care home, individual licensee under chapter 237, member of the staff of a mental health center, peace officer, dental hygienist, counselor, or mental health professional, who, in the course of employment or in providing child foster care, examines, attends, counsels or treats a child and reasonably believes a child has suffered abuse.

2. Any other person who believes that a child has been abused may make a report as provided in section 232.70.

3. A person required to make a report under subsection 1, other than a physician whose professional practice does not regularly involve providing primary health care to children, shall complete two hours of training relating to the identification and reporting of child abuse within six months of initial employment or self-employment involving the examination, attending, counseling, or treatment of children on a regular basis. Within one month of initial employment or self-employment, the person shall obtain a statement of the abuse reporting requirements from the person's employer or, if self-employed, from the department. The person shall complete at least two hours of additional child abuse identification and reporting training every five years. If the person is an employee of a hospital or similar institution, or of a public or private institution, agency, or facility, the employer shall be responsible for providing the child abuse identification and reporting training. If the person is self-employed, the person shall be responsibie for obtaining the child abuse identification and reporting training. The person may complete the initial or additional training as part of a continuing education program required under chapter 258A or may complete the training as part of a training program offered by the department of human services, the department of education, an area education agency, a school district, the Iowa law enforcement academy, or a similar public agency.

232.70-Reporting procedures.

1. Each report made by a mandatory reporter, as defined in section 232.69, subsection 1, shall be made both orally and in writing. Each report made by a permissive reporter, as defined in section 232.69, subsection 2, may be oral, written, or both.

2. The oral report shall be made by telephone or otherwise to the department of human services. If the person making the report has reason to believe that immediate protection for the child is advisable, that person shall also make an oral report to an appropriate law enforcement agency.

3. The written report shall be made to the department of human services within forty-eight hours after such oral report.

4. The department of human services shall:

a. Immediately, upon receipt of an oral report, make a determination as to whether the report constitutes an allegation of child abuse as defined in section 232.68;

b. Make a report to the central registry if the oral report has been determined to constitute a child abuse allegation;

c. Forward a copy of the written report to the registry; and

d. Notify the appropriate county attorney of the receipt of any report.

5. The oral and written reports shall contain the following information, or as much thereof as the person making the report is able to furnish:

a. The names and home address of the child and the child's parents or other persons believed to be responsible for the child's care;

b. The child's present whereabouts if not the same as the parent's or other person's home address;

c. The child's age;

d. The nature and extent of the child's injuries, including any evidence of previous injuries;

e. The name, age and condition of other children in the same home;

f. Any other information which the person making the report believes might be helpful in establishing the cause of the injury to the child, the identity of the person or persons responsible for the injury, or in providing assistance to the child; and

g. The name and address of the person making the report

6. A report made by a permissive reporter, as defined in section 232.69, subsection 2, shall be regarded as a report pursuant to this chapter whether or not the report contains all of the information required by this section and may be made to the department of human services, county attorney, or law enforcement agency. If the report is made to any agency other than the department of human services, such agency shall promptly refer the report to the department of human services.

232.73-Immunity from liability.

A person participating in good faith in the making of a report or photographs or X rays pursuant to this chapter or aiding and assisting in an investigation of a child abuse report pursuant to section 232.71 shall have immunity from any liability, civil or criminal, which might otherwise be incurred or imposed. The person shall have the same immunity with respect to participation in good faith in any judicial proceeding resulting from the report or relating to the subject matter of the report.

232.75 Sanctions.

1. Any person, official, agency or institution, required by this chapter to report a suspected case of child abuse who knowingly and willfully fails to do so is guilty of a simple misdemeanor.
2. Any person, official, agency or institution, required by section 232.69 to report a suspected case of child abuse who knowingly fails to do so is civilly liable for the damages proximately caused by such failure.
3. A person who reports or causes to be reported to the department of human services false information regarding an alleged act of child abuse, knowing that the information is false or that the act did not occur, commits a simple misdemeanor.

232.77-Photographs and X rays.

Any person who is required to report a case of child abuse may take or cause to be taken, at public expense, photographs or X rays of the areas of trauma visible on a child. Any health practitioner may, if medically indicated, cause to be performed radiological examination of the child. Any person who takes any photographs or X rays pursuant to this section shall notify the department of human services that such photographs or X rays have been taken, and shall retain such photographs or X rays for a reasonable time thereafter. Whenever such person is required to report under section 232.69, in that person's capacity as a member of the staff of a medical or other private or public institution, agency or facility, that person shall immediately notify the person in charge of such institution, agency, or facility or that person's designated delegate of the need for photographs or X rays.

EMERGENCY VEHICLE OPERATION

(*Iowa Code excerpts*)

321.1 Definitions.

26. *"Authorized emergency vehicle"* means vehicles of the fire department, police vehicles, ambulances and emergency vehicles owned by the United States, this state or any subdivision of this state or any municipality of this state, and privately owned ambulances, and fire, rescue or disaster vehicles as are designated or authorized by the director of transportation under section 321.451.

43. *"Chauffeur"* means a person who operates a motor vehicle, including a school bus, in the transportation of persons for wages, compensation or hire, or a person who operates a truck tractor, road tractor or any motor truck which is required to be registered at a gross weight classification exceeding five tons, or any such motor vehicle exempt from registration which would be within the gross weight classification if not so exempt. A person is not a chauffeur when the operation of the motor vehicle, other than a truck tractor, by the owner or operator is occasional and merely incidental to the owner's or operator's principal business.

A person is not a chauffeur when the operation is by a volunteer fire fighter operating fire apparatus, or is by a volunteer ambulance or rescue squad attendant operating ambulance or rescue squad apparatus. If a volunteer fire fighter or ambulance or rescue squad operator receives nominal compensation not based upon the value of the services performed, the fire fighter or operator shall be considered to be receiving no compensation and classified as a volunteer.

If authorized to transport inmates, probationers, parolees, or work releases by the director of the Iowa department of corrections or the director's designee, an employee of the Iowa department of corrections or a district department of correctional services is not a chauffeur when transporting the inmates, probationers, parolees, or work releases in an automobile.

A farmer or the farmer's hired help is not a chauffeur when operating a truck, other than a truck tractor, owned by the farmer and used exclusively in connection with the transportation of the farmer's own products or property.

81. *"Ambulance"* means a motor vehicle which is equipped with life support systems and used to transport sick and injured persons who require emergency medical care to medical facilities.

321.117 Motorcycle, ambulance and hearse fees.

The annual registration fee for ambulances and hearses shall be fifty dollars. Passenger car plates shall be issued for ambulances and hearses.

321.229 Obedience to peace officers.

No person shall willfully fail or refuse to comply with any lawful order or direction of any peace officer invested by law with authority to direct, control, or regulate traffic.

321.230 Public officers not exempt.

The provisions of this chapter applicable to the drivers of vehicles upon the highways shall apply to the drivers of all vehicles owned or operated by the United States, this state or any county, city, district, or any other political subdivision of the state, subject to such specific exceptions as are set forth in this chapter with reference to authorized emergency vehicles.

321.231 Authorized emergency vehicles.

1. The driver of an authorized emergency vehicle, when responding to an emergency call or when in the pursuit of an actual or suspected perpetrator of a felony or in response to an incident dangerous to the public or when responding to but not upon returning from a fire alarm, may exercise the privileges set forth in this section.

2. The driver of any authorized emergency vehicle, may:

a. Park or stand an authorized emergency vehicle, irrespective of the provisions of this chapter.

b. Disregard laws or regulations governing direction of movement for the minimum distance necessary before an alternative route that conforms to the traffic laws and regulations is available.

3. The driver of a fire department vehicle, police vehicle or ambulance may:

a. Proceed past a red or stop signal or stop sign, but only after slowing down as may be necessary for safe operation.

b. Exceed the maximum speed limits so long as the driver does not endanger life or property.

4. The exemptions granted to an authorized emergency vehicle under subsection 2 and for a fire department vehicle, police vehicle or ambulance as provided in subsection 3 shall apply only when such vehicle is making use of an audible signaling device meeting the requirements of section 321.433, or a visual signaling device approved by the department except that use of an audible or visual signaling device shall not be required when exercising the exemption granted under subsection 3, paragraph "*b*" of this section when the vehicle is operated by a peace officer, pursuing a suspected violator of the speed restrictions imposed by or pursuant to this chapter, for the purpose of determining the speed of travel of such suspected violator.

5. The foregoing provisions shall not relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons, nor shall such provisions protect the driver from the consequences of the driver's reckless disregard for the safety of others.

321.324 Operation on approach of emergency vehicles.

Upon the immediate approach of an authorized emergency vehicle with any lamp or device displaying a red light, or an authorized emergency vehicle of a fire department displaying a blue light, or when the driver is giving audible signal by siren, exhaust whistle, or bell, the driver of every other vehicle shall yield the right of way and shall immediately drive to a position parallel to, and as close as possible to, the right hand edge or curb of the highway clear of any intersection and shall stop and remain in such position until the authorized emergency vehicle has passed, except when otherwise directed by a police officer. For the purposes of this section, "red light" or "blue light" means a light or lighting device that, when illuminated, will exhibit a solid flashing or strobing red or blue light.

Upon the approach of an authorized emergency vehicle, as above stated, the driver of every streetcar shall immediately stop such car clear of any intersection and keep it in such position until the authorized emergency vehicle has passed, except when otherwise directed by a police officer.

This section shall not operate to relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons using the highway.

321.422 Red light in front.

No person shall drive or move any vehicle or equipment upon any highway with any lamp or device there on displaying or reflecting a red light visible from directly in front thereof. This section shall not apply to authorized emergency vehicles, or school buses and vehicles as provided in section 321.423, subsection 6. No person shall display any color of light other than red on the rear of any vehicle, except that stop lights and directional signals may be red, yellow, or amber.

321.423 Flashing lights.

1. *Definitions.* As used in this section, unless the context otherwise requires:

a. *"Fire department"* means a paid or volunteer fire protection service provided by a benefited fire district under chapter 357B or by a county, municipality or township, or a private corporate organization that has a valid contract to provide fire protection service for a benefited fire district, county, municipality, township or governmental agency.

b. *"Member"* means a person who is a member in good standing of a fire department or person who is an advanced or basic emergency medical care provider employed by an ambulance, rescue, or first responder service.

c. "Advanced emergency medical care provider" means as defined in section 147A.1.

d. "Basic emergency medical care provider" means as defined in section 147.1.

e. *"Hazard light"* are lights which flash yellow or amber to the front of the vehicle and red to the rear of the vehicle simultaneously.

2. *Prohibited lights.* A flashing light on or in a motor vehicle is prohibited except as follows:

a. On an authorized emergency vehicle.

b. On a vehicle as a means of indicating a right or left turn, a mechanical failure, or an emergency stop or intent to stop.

c. On a motor vehicle used by a rural mail carrier when stopping or stopped on or near a highway in the process of delivering mail, if such a light is any shade of color between white and amber and if it is mounted as a dome light on the roof of the vehicle.

d. On a vehicle being operated under an excess size permit issued under chapter 321E.

e. A flashing blue light on a vehicle upon which a blue light is permitted pursuant to subsection 3 of this section.

f. A flashing white light, used in conjunction with hazard lights, is permitted on a vehicle pursuant to subsection 7.

g. A white flashing strobe light mounted on a school bus as permitted under section 321.373, subsection 7.

3. *Blue light.* A blue light shall not be used on any vehicle except:

a. A vehicle owned or exclusively operated by a fire department or

b. A vehicle authorized by the director when:

(1) The vehicle is owned by a member of a fire department.

(2) The request for authorization is made by the member on forms provided by the department.

(3) Necessity for authorization is demonstrated in the request.

(4) The chief of the fire department certifies that the member is in good standing with the fire department and recommends that the authorization be granted.

4. *Expiration of authority.* The authorization shall expire at midnight on the thirty-first day of December five years from the year in which it was issued, or when the vehicle is no longer owned by the member, or when the member has ceased to be an active member of the fire department or of an ambulance, rescue or first responder service or when the member has used the blue or white light beyond the scope of its authorized use.

5. *When used.* The certificate of authorization shall be carried at all times with the certificate of registration of the authorized vehicle and the operator of the vehicle shall not illuminate the blue or white light except in any of the following circumstances:

a. When the member is en route to the scene of a fire or is responding to an emergency in the line of duty requiring the services of the member.

b. When the authorized vehicle is transporting a person requiring emergency care.

c. When the authorized vehicle is at the scene of an emergency.

d. The use of the blue or white light in or on a private motor vehicle shall be for identification purposes only.

6. *Amber flashing light.* A farm tractor, farm tractor with towed equipment, self-propelled implement of husbandry, road construction or maintenance vehicle, road grader, or other vehicle principally designed for use off the highway which, when operated on a primary or secondary road, is operated at a speed of twenty-five miles an hour or less, shall be equipped with and display an amber flashing light visible from the rear at any time from sunset to sunrise. All vehicles specified in this subsection which are manufactured for sale or sold in this state shall be equipped with an amber flashing light. The type, number, dimensions, and method of mounting of the lights shall be determined by the director. The director, when approving the light, shall be guided as far as practicable by the standards of the American Society of Agricultural Engineers.

7. *Flashing white light*. Except as provided in section 321.373, subsection 7, and subsection 2, paragraph "c" of this section, a flashing white light shall only be used on a vehicle when used in conjunction with hazard lights and a flashing white light shall not be used on a vehicle except in any of the following circumstances:

a. On a vehicle owned or exclusively operated by an ambulance, rescue, or first responder service.

b. On a vehicle authorized by the director of public health when all the following apply:

(1) The vehicle is owned by a member of an ambulance, rescue or first responder service.

(2) The request for authorization is made by the member on forms provided by the Iowa department of public health.

(3) Necessity for authorization is demonstrated in the request.

(4) The head of an ambulance, rescue or first responder service certifies that the member is in good standing and recommends that the authorization be granted.

c. On an authorized emergency vehicle.

The Iowa department of public health shall adopt rules to establish issuance standards, including allowing local emergency medical services providers to issue certificates of authorization, and shall adopt rules to establish certificate of authorization revocation procedures.

321.428

The director may approve or disapprove lighting devices and issue and enforce rules establishing standards and specifications for the approval of the lighting devices, their installation, adjustment, and aiming, and adjustment when in use on motor vehicles, except for lights permitted pursuant to section 321.423, subsection 7. The rules shall correlate to and, so far as practicable, conform to the then current standards and specifications of the society of automotive engineers applicable to such equipment. The director of public health shall have the same authority as granted to the director under this section to regulate lighting devices allowed under section 321.423, subsection 7.

321.433 Sirens and bells prohibited.

No vehicle shall be equipped with nor shall any person use upon a vehicle any siren, whistle, or bell, except as otherwise permitted in this section. It is permissible but not required that any commercial vehicle be equipped with a theft alarm signal device which is so arranged that it cannot be used by the driver as an ordinary warning signal. Any authorized emergency vehicle may be equipped with a siren, whistle, or bell, capable of emitting sound audible under normal conditions from a distance of not less than five hundred feet and of a type approved by the department, but such siren shall not be used except when such vehicle is operated in response to an emergency call or in the immediate pursuit of an actual or suspected violator of the law, in which said latter events the driver of such vehicle shall sound said siren when necessary to warn pedestrians and other drivers of the approach thereof.

321.445

2. The driver and front seat occupants of a type of motor vehicle which is subject to registration in Iowa, except a motorcycle or a motorized bicycle, shall wear a properly adjusted and fastened safety belt or or safety harness any time the vehicle is in forward motion on a street or highway in this state except that a child under six years of age shall be secured as required under section 321.446.

This subsection does not apply to:

f. Front seat occupants of an authorized emergency vehicle while they are being transported in an emergency. However, this exemption does not apply to the driver of the authorized emergency vehicle.

During the six-month period from July 1, 1986 through December 31, 1986, peace officers shall issue only warning citations for violations of this subsection, except this does not apply to drivers subject to the federal motor carrier safety regulation 49 C.F.R. 392.16.

321.446 Child restraint devices

3. This section does not apply to peace officers acting on official duty. This section also does not apply to the transportation of children in 1965 model year or older vehicles or authorized emergency vehicles. This section does not apply to the transportation of a child who has been certified by a physician licensed under chapter 148, 150, or 150A as having a medical, physical, or mental condition which prevents or makes inadvisable securing the child in a child restraint system, safety belt or safety harness.

321.451 Emergency vehicles - certificate of designation.

The director may designate a privately owned ambulance, fire, rescue or disaster vehicle as an authorized emergency vehicle, and issue a certificate of designation for it, upon written request being made on forms provided by the department and showing necessity for the designation. The certificate of designation shall at all times be carried with the certificate of registration of the vehicle to which it refers and may be revoked by the director upon a showing of abuse.

HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS

(Iowa Code excerpts)

321.450

1. Notwithstanding other provisions of this section, or the age requirements under section 321.449, the age requirements under section 321.449 and the rules adopted under this section pertaining to compliance with regulations adopted under U.S.C., Title 49, and found in 49 C.F.R. 177.804, shall not apply to retail dealers of fertilizers, petroleum products, and pesticides and their employees while delivering fertilizers, petroleum products, and pesticides to farm customers within a one-hundred-mile radius of their retail place of business. Notwithstanding contrary provisions of this chapter, motor vehicles registered for a maximum gross weight of five tons or less shall be exempt from the requirements of placarding and of carrying hazardous materials shipping papers if the hazardous materials which are transported are clearly labeled.
2. This Act, being deemed of immediate importance, takes effect upon its enactment.

MOTOR VEHICLE MANUFACTURERS, DISTRIBUTORS AND DEALERS

(Iowa Code excerpts)

322.29 Issuance of license - fees.

Application for license shall be made to the department by a manufacturer, distributor, wholesaler, factory branch, distributor branch, factory representative or distributor representative in a form and containing information as the department requires and shall be accompanied by the required license fee. Licenses shall be granted or refused within thirty days after application, and shall expire, unless sooner revoked or suspended, on December 31 of the calendar year for which they are granted.

License fees for each calendar year, or part thereof, shall be as follows effective January 1, 1980:

5.

A person who rebuilds new completed motor vehicles by fabricating, altering, adding, or replacing essential parts, components, or equipment for the purpose of building an ambulance, rescue vehicle, or fire vehicle as defined in chapter 321 may be issued a license as a wholesaler of new motor vehicles of the make and model rebuilt.

EMERGENCY VEHICLES

(Also see Iowa Administrative Code excerpts 761–Chapter 451)

COUNTY HOSPITAL POWERS

(Iowa Code excerpts)

347.14 Powers

The board of hospital trustees may:

13. Purchase, lease, equip, maintain and operate an ambulance or ambulances to provide necessary and sufficient ambulance service or to contract for such vehicles, equipment, maintenance or service when such ambulance service is not otherwise available.

TOWNSHIP FUNDING

(Iowa Code excerpts)

359.42 Township fire protection service, emergency warning system, and ambulance service.

The trustees of each township shall provide fire protection service for the township, exclusive of any part of the township within a benefited fire district and, in counties not providing ambulance services, may provide ambulance service. The trustees may purchase, own, rent or maintain fire protection service or ambulance service apparatus or equipment or both kinds of apparatus or equipment and provide housing for the equipment. The trustees of a township which is located within a county having a population of three hundred thousand or more may also establish and maintain an emergency warning system within the township. The trustees may contract with a public or private agency under chapter 28E for the purpose of providing any service or system required or authorized under this section.

359.43 Tax levy - supplemental levy - districts.

1. The township trustees may levy an annual tax not exceeding forty and one-half cents per thousand dollars of assessed value of the taxable property in the township, excluding property within a benefited fire district or within the corporate limits of a city, for the purpose of exercising the powers and duties specified in section 359.42. However, in a township having a fire protection service or ambulance service agreement or both service agreements with a special charter city having a paid fire department, the township trustees may levy an annual tax not exceeding fifty-four cents per thousand dollars of the assessed value of the taxable property for the services authorized or required under section 359.42 and in a township which is located within a county having a population of three hundred thousand or more, the township trustees may levy an annual tax not exceeding sixty-seven and one-half cents per thousand dollars of assessed value of taxable property for the services authorized or required under section 359.42.
2. If the levy authorized under subsection 1 is insufficient to provide the services authorized or required under section 359.42, the township trustees may levy an additional annual tax not exceeding twenty and one-fourth cents per thousand dollars of assessed value of the taxable property in the township, excluding any property within the corporate limits of a city, to provide the services.
3. The township trustees may divide the township into tax districts for the purpose of providing the services authorized or required under section 359.42 and may levy a different tax rate in each district, but the tax levied in a tax district for the authorized or required services shall not exceed the tax levy limitations for that township as provided in this section.
4. Of the levies authorized under subsections 1 and 2, the township trustees may credit to a reserve account annually an amount not to exceed ten cents per thousand dollars of the assessed value of the taxable property in the township for the purchase or replacement of supplies and equipment required to carry out the services specified under section 359.42. Notwithstanding section 453.7, interest earned on money credited to the reserve account shall be credited to the reserve account.

ENHANCED 911 EMERGENCY TELEPHONE

(Entire Statute)

477B.1 Purpose.

The legislature finds that enhanced 911 emergency telephone communication systems further the public interest and protect the health, safety, and welfare of the people of Iowa. The purpose of this chapter is to enable the orderly development, installation, and operation of enhanced 911 emergency telephone communication systems statewide. These systems are to be operated under governmental management and control for the public benefit.

477B.2 Definitions.

As used in this chapter, unless the context otherwise requires:

1. "*Administrator*" means the administrator of the division of disaster services of the department of public defense.
2. "*Public or private safety agency*" means a unit of state or local government, a special purpose district, or a private firm which provides or has the authority to provide fire fighting, police, ambulance, or emergency medical services.

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3. *"Provider"* means a person who provides, or offers to provide, E911 equipment, installation, maintenance, or exchange access services within the enhanced 911 service area.

4. *"Enhanced 911"* or "E911"" means a service which provides the user of a public telephone system the ability to reach a public safety answering point by dialing the digits 911, and which has the following additional features:

a. Routes an incoming 911 call to the appropriate public safety answering point selected from the public safety answering points operating in a 911 service area.

b. Automatically displays the name, address, and telephone number of an incoming 911 call and public safety agency servicing the address on a video monitor at the appropriate public safety answering point.

5. *"Enhanced 911 service plan"* means a plan that includes the following information:

a. A description of the enhanced 911 service area.

b. A list of all public and private safety agencies within the enhanced 911 service area.

c. The number of public safety answering points within the enhanced 911 service area.

d. Identification of the agency responsible for management and supervision of the enhanced 911 emergency telephone communication system.

e. A statement of estimated costs to be incurred by the joint E911 service board, including separate estimates of the following:

1. Nonrecurring costs, including, but not limited to, public safety answering points, network equipment, software, database, addressing, initial training, and other capital and start-up expenditures, including the purchase or lease of subscriber names, addresses, and telephone information from the local exchange service provider.

2. Recurring costs, including, but not limited to, network access fees and other telephone charges, software, equipment, and database management, and maintenance, including the purchase or lease of subscriber names, addresses, and telephone information from the local exchange service provider. Recurring costs shall not include personnel costs for a public safety answering point.

Costs are limited to nonrecurring and recurring costs directly attributable to the provision of 911 emergency telephone communication service. Costs do not include expenditures for any other purpose, and specifically exclude costs attributable to other emergency services or expenditures for buildings, radios, or personnel.

f. Current equipment operated by affected providers, and central office equipment and technology upgrades necessary for the provider to implement enhanced 911 service within the enhanced 911 service area on or before July 1, 1992.

g. A schedule for implementation of the plan throughout the E911 service area. The schedule may provide for phased implementation. However, a joint 911 service board may decide not to implement E911 service.

h. The number of telephone access lines in the enhanced 911 service area.

i. The total property valuation in the enhanced 911 service area.

6. *"Enhanced 911 service area"* means the geographic area to be serviced, or currently serviced under an enhanced 911 service plan, provided that an enhanced 911 service area must at minimum encompass one entire county. The enhanced 911 service area may encompass more than one county, and need not be restricted to county boundaries.

7. *"Enhanced 911 service surcharge"* is a charge set by the E911 service area operating authority and assessed on each access line which physically terminates within the E911 service area.

8. *"Access line"* means a local exchange access line that has the ability to access local dial tone and reach a local public safety agency.

9. *"Division"* means the division of disaster services, department of public defense.

10. *"Public safety answering point"* means a twenty-four hour local jurisdiction communications facility which received enhanced 911 service calls and directly dispatches emergency response services or relays calls to the appropriate public or private safety agency.

11. *"Local exchange service provider"* means a person engaged in providing telecommunications service between points within an exchange.

477B.3 Joint 911 Service Board – 911 Service Plan – Implementation – Waiver.

1. Joint 911 service Boards To Submit Plans. The board of supervisors of each county shall establish a joint 911 service board not later than January 1, 1989. Each political subdivision of the state having a public safety agency serving territory within the county is entitled to voting membership on the joint 911 service board. Each private safety entity agency operating within the area is entitled to nonvoting membership on the board. A township which does not operate its own public safety agency, but contracts for the provision of public safety services, is not entitled to membership on the joint 911 service board, but its contractor is entitled to membership according to the

contractor's status as a public or private safety agency. The joint 911 service board shall develop an enhanced 911 service plan encompassing at minimum the entire county, unless an exemption is granted by the administrator permitting a smaller E911 service area. The administrator may grant a discretionary exemption from the single county minimum service area requirement based upon an E911 joint service board's or other E911 service plan operating authority's presentation of evidence which supports the requested exemption if the administrator finds that local conditions make adherence to the minimum standard unreasonable or technically infeasible, and that the purposes of this chapter would be furthered by granting an exemption. The minimum size requirement is intended to prevent unnecessary duplication of public safety answering points and minimize other administrative, personnel, and equipment expenses. An E911 service area must encompass a geographically contiguous area. No exemption shall be granted from the contiguous area requirement. The administrator may order the inclusion of a specific territory in an adjoining E911 service plan area to avoid the creation by exclusion of a territory smaller than a single county not serviced by surrounding E911 service plan areas upon request of the joint 911 service board representing the territory. The E911 service plan operating authority shall submit the plan on or before March 1, 1989, to all of the following:

a. The division.
b. Public and private safety agencies in the enhanced 911 service area.
c. Providers affected by the enhanced 911 service plan.

The division shall prepare a statewide summary of the plans submitted and present the summary to the legislature on or before June 1, 1989.

2. Compliance Waivers Available In Limited Circumstances.

The administrator may extend, in who or in part, the time for implementation of an enhanced 911 service plan beyond the scheduled plan of implementation, by issuance of a compliance waiver. The waiver shall be based upon a joint 911 service board's presentation of evidence which supports an extension if the administrator finds that local conditions make implementation financially unreasonable or technically infeasible by the originally scheduled plan of implementation. The compliance waiver shall be for a set period of time, and subject to review and renewal or denial or of renewal upon its expiration. The waiver may come all or a portion of a 911 service plan's enhanced 911 service area to facilitate phased implementation when possible. The granting of a compliance waiver does not create a presumption that the identical or similar waiver will be extended in the future. Consideration of compliance waivers shall be on a case-by-case basis.

3. 28E Agreement -- Alternative To Joint 911 Service Board.

A legal entity created pursuant to chapter 28E by a county or counties, other political divisions, and public or private agencies to jointly plan, implement, and operate a countywide, or larger, enhanced 911 service system may be substituted for the joint 911 service board required under subsection 1.

An alternative legal entity created pursuant to chapter 28E as a substitute for a joint 911 service board, as permitted by this subsection, may be created by either:

a. Agreement of the parties entitled to voting membership on a joint 911 service board.
b. Agreement of the members of a joint 911 service board.

An alternative chapter 28E entity has all of the powers of a joint 911 service board and any additional powers granted by the agreement. As used in this chapter, "joint 911 service board" includes an alternative chapter 28E entity created for that purpose, except as specifically limited by the chapter 28E agreement or unless clearly provided otherwise in this chapter. A chapter 28E agreement related to E911 service shall permit the participation of a private safety agency or other persons allowed to participate in a joint 911 service board, but the terms, scope, and conditions of participation are subject to the chapter 28E agreement.

4. Participation In Joint E911 Service Board Required.

A political subdivision or state agency having a public safety agency within its territory or jurisdiction shall participate in a joint E911 service board and cooperate in preparing the E911 service plan.

477B.4 Required Conversion Of Pay Telephones To Allow 911 Calls Without Depositing Coins Or Other Charge.

1. Conversion and Notice required. When an enhanced 911 service system becomes operational or as soon as feasible thereafter, each provider or other owner or lessee of a pay station telephone to be operated within the enhanced 911 service area shall do the following:

a. Convert each telephone to permit a caller to dial 911 without first inserting a coin or paying any other charge.

b. Prominently display on each pay telephone a notice advising callers to dial 911 in an emergency and that deposit of a coin is not required.

2. Certain Pay Phones Prohibited Within Service Area.

After commencement of enhanced 911 service in an enhanced 911 service area, a person shall not install or offer for use within the 911 service area a pay station telephone unless the telephone is capable of accepting a 911 call without prior insertion of a coin or payment of any other charge, and unless the telephone displays notice of free 911 service.

477B.5 Private Listing Subscribers And 911 Service.

Private listing subscribers in an enhanced 911 service area waive the privacy afforded by nonlisted or non published numbers to the extent that the name and address associated with the telephone number may be furnished to the enhanced 911 service system, for all routing, for automatic retrieval of location information, and for associated emergency services.

477B.6 Referendum on E911 In Proposed Service Area.

1. Before a joint E911 service board may request imposition of the surcharge by the administrator, the board shall submit the following question to either voters or subscribers, as provided in subsection 2, in the proposed E911 service area, and the question shall receive a favorable vote from a simple majority of persons submitting valid ballots on the following question within the proposed E911 service area:

"Should enhanced 911 emergency telephone service be funded, in whole or in part, by a surcharge of (up to twenty-five cents) per month per telephone access line collected as part of each telephone subscriber's monthly phone bill if provided within (description of the proposed E911 service area)?"

2. The referendum required as a condition of the surcharge imposition in subsection 1 shall be conducted using the following electoral mechanism:

At the request of the joint E911 service board a county commissioner of elections shall include the question on the next eligible general election ballot in each electoral precinct to be served, in whole or in part, by the proposed E911 service area provided the request is timely submitted to permit inclusion. The question may be included in the next election in which all of the voters in the proposed E911 service area will be eligible to vote on the same day, such as a primary, general, or school board election. The county commissioner of elections shall report the results to the joint E911 service board. The joint E911 service board shall compile the results if subscribers from more than one county are included within the proposed service area. The joint E911 service board shall announce whether a simple majority of the compiled votes reported by the commissioner approved the referendum question.

3. The secretary of state, in consultation with the administrator of the office of disaster services of the department of public defense, shall adopt rules for the conduct of joint E911 service referendums as required by and consistent with subsection 1 and 2.

477B.7 Funding – E911 Service Surcharge.

When an E911 service plan is implemented, the costs of providing E911 service within an E911 service board and the member political subdivisions. Costs in excess of the amount raised by imposition of the E911 service surcharge provided for under subsection 1, shall be paid by the joint E911 service board from such revenue sources allocated among the member, political subdivisions as determined by the joint E911 service board. Funding is not limited to the surcharge, and surcharge revenue may be supplemented by other permissible local and state revenue sources. A joint 911 service board shall not commit a political subdivision to appropriate property tax revenues to fund an E911 service plan without the consent of the political subdivision. A joint 911 service board may approve a 911 service plan, including a funding formula requiring appropriations by participating political subdivisions, subject to the approval of the funding formula by each political subdivision. However, a political subdivision may agree in advance to appropriate property tax revenues or other moneys according to a formula or plan developed by an alternative chapter 28E entity.

1. Local E911 Service Surcharge Imposition.

a. To encourage local implementation of E911 service, one source of funding for E911 emergency telephones communication systems shall come from a surcharge of twenty-five cents, per month, per access line on each access line subscriber, except as provided in subsection 5. The surcharge shall be imposed by order of the administrator as follows:

(1) The administrator shall notify a provider scheduled to provide exchange access line service to an E911 service area, that implementation of an approved E911 service plan has been approved by the joint 911 service board and by the service area referendum, and that collection of the surcharge is to begin within one hundred days.

(2) The notice shall be provided at least one hundred days before the surcharge must be billed for the first time.

b. The surcharge shall terminate at the end of twenty-four months, unless either, or both, of the following conditions is met:

(1) E911 service is initiated for all or a part of the E911 service area.

(2) An extension is granted by the administrator for good cause.

c. The surcharge shall terminate at the end of twenty-four months if the joint E911 service plan has not been approved by the administrator within eighteen months of the original notice to the provider to impose the surcharge, and shall not be reimposed until a service plan is approved by the administrator and the administrator give providers notice as required by paragraph "a", subparagraphs (1) and (2).

2. Surcharge Collected By Providers.

The surcharge shall be collected as part of the access line service provider's periodic billing to a subscriber. In compensation for the costs of billing and collection, the provider may retain one percent of the gross surcharges collected. If the compensation is insufficient to fully recover a provider's costs for billing and collection of the surcharge, the deficiency shall be included in the provider's costs for rate making purposes to the extent it is reasonable and just under section 476.65. The surcharge shall be remitted to the E911 service operating authority for deposit into the E911 service fund quarterly by the provider. A provider is not liable for an uncollected surcharge for which the provider has billed a subscriber but not been paid. The surcharge shall appear as a single line item on a subscriber's periodic billing entitled, "E911 emergency telephone service surcharge". The E911 service surcharge is not subject to sales or use tax.

3. Maximum Limit Per Subscriber Billing For Surcharge.

An individual subscriber shall not be required to pay on a single periodic billing the surcharge on more than one hundred access lines, or their equivalent, in an E911 service area. A subscriber shall pay the surcharge in each E911 service area in which the subscriber receives across line service.

4. E911 Service Fund.

Each joint E911 service board shall establish and maintain as a separate account an E911 service fund. Any funds remaining in the account at the end of each fiscal year shall not revert to the general funds of the member political subdivisions, except as provided in subsection 5, but shall remain in the E911 service fund. Moneys in an E911 service fund may only be used for nonrecurring and recurring costs of the E911 service plan as approved by the administrator, as those terms are defined by section 477B.2.

5. Use Of Moneys In Fund -- Priority and Limitations On Expenditure.

Moneys deposited in the E911 service fund shall be used for the following, in order of priority:

a. Money shall first be spent for actual recurring costs of operating the E911 service plan.

b. If money remains in the fund after fully paying for recurring costs incurred in the preceding year, the remainder may be spent to pay for nonrecurring costs, not to exceed actual nonrecurring costs as approved by the administrator.

c. If money remains in the fund after fully paying obligations under subsections 1 and 2, the remainder may be accumulated in the fund as a carryover operating surplus. If the surplus is greater than twenty-five percent of the approved annual operating budget for the next year, the administrator shall reduce the surcharge by an amount calculated to result in a surplus of no more than twenty-five percent of the planned annual operating budget. After nonrecurring costs have been paid, if the surcharge is less than twenty-five cents and the fund surplus is less than twenty-five percent of the approved annual operating budget, the administrator shall, upon application of the joint E911 service board, increase the surcharge in an amount calculated to result in a surplus of twenty-five percent of the approved annual operating budget. In no case may the surcharge exceed twenty-five cents per month, per access line. The surcharge may only be adjusted one in a single year, upon one hundred days prior notice to the provider.

6. Limitation Of Actions -- Provider Not Liable On Cause Of Action Related To Provision Of 911 Services.

A claim or cause of action does not exist based upon or arising out of an act or omission in connection with a provider's participation in an E911 service plan or provision of 911 or local exchange access service, unless the act or omission is determined to be willful and wanton negligence.

7. APPLICABILITY. Section 3 of this Act is applicable to all referendums approved by either a county board of supervisors or a joint 911 service board, or both, on or after July 1, 1989. Section 3 is not applicable to a referendum approved prior to July 1, 1989, notwithstanding that the actual referendum election or balloting is conducted on or after July 1, 1989.

8. This Act, being deemed of immediate importance, is effective upon enactment.

477B.8 Local Exchange Service Information

1. A local exchange service provider shall furnish to the E911 service provider, designated by the joint E911 service board, all names, addresses, and telephone number information concerning its subscribers which will be served by the E911 system and shall periodically update the local exchange service information charges according to its tariffs on file with and approved by the Iowa utilities board. The tariff charges shall be the same whether or not the local exchange service provider is designated as the E911 service provider by the joint E911 service board.

2. Subscriber information remains the property of the local exchange service provider.

The joint E911 service board, the designated E911 provider, and the public safety answering point, their agents, employees, and assigns shall use local exchange service information provided by the local exchange service provider solely for the purposes of providing E911 emergency telephone service, and it shall otherwise be kept confidential. A person who violates this section is guilty of a simple misdemeanor.

This chapter does not require a local exchange service provider to sell or provide its subscriber names, addresses, or telephone number information to any person other than the E911 service provider designated by the joint E911 service board.

LIABILITY – GOOD SAMARITAN LAW

(Iowa Code excerpts)

613.17 Emergency Assistance In An Accident.

Any person, who in good faith renders emergency care or assistance without compensation shall not be liable for any civil damages for acts or omissions occurring at the place of an emergency or accident or while the person is in transit to or from the emergency or accident or while the person is at or being moved to or from an emergency shelter unless such acts or omissions constitute recklessness. For the purposes of this section, if a volunteer fire fighter, a volunteer operator or attendant of an ambulance or rescue squad service, a volunteer paramedic, or a volunteer emergency medical technician receives nominal compensation not based upon the value of the services performed, that person shall be considered to be receiving no compensation. The operation of a motor vehicle in compliance with section 321.231 by a volunteer fire fighter, volunteer operator or attendant of an ambulance or rescue squad service, a volunteer paramedic, or volunteer emergency medical technician shall be considered rendering emergency care or assistance for purposes of this section.

613.19 Personal liability.

A director, officer, employee, member, trustee, or volunteer, of a nonprofit organization is not liable on the debts or obligations of the nonprofit organization and a director, officer, employee, member, trustee, or volunteer is not personally liable for a claim based upon an act or omission of the person performed in the discharge of the person's duties, except for acts or omissions which involve intentional misconduct or knowing violation of the law, or for a transaction from which the person derives an improper personal benefit. For purposes of this section, *"nonprofit organization"* includes an unincorporated club, association, or other similar entity, however named, if no part of its income or profit is distributed to its members, directors, or officers.

TORT LIABILITY OF GOVERNMENTAL SUBDIVISIONS

(Iowa Code excerpts)

613A.1 Definitions.

As used in this chapter, the following terms shall have the following meanings:

1. *"Municipality"* means city, county, township, school district, and any other unit of local government except soil and water conservation districts as defined in section 467A.3, subsection 1, and water resource districts as defined in section 467D.2, subsection 1.

2. *"Governing body"* means the council of a city, county board of supervisors, board of township trustees, local school board, and other boards and commissions exercising quasi-legislative, quasi-executive, and quasi-judicial power over territory comprising a municipality.

3. *"Tort"* means every civil wrong which results in wrongful death or injury to person or injury to property or injury to personal or property rights and includes but is not restricted to actions based upon negligence; error or omission; nuisance; breach of duty, whether statutory or other duty or denial or impairment of any right under any constitutional provision, statute or rule of law.

4. *"Officer"* includes but is not limited to the members of the governing body.

613A.2 Liability imposed.

Except as otherwise provided in this chapter, every municipality is subject to liability for its torts and those of its officers and employees, acting within the scope of their employment or duties, whether arising out of a governmental or proprietary function.

For the purpose of this chapter, employee includes a person who performs services for a municipality whether or not the person is compensated for the services, unless the services are performed only as an incident to the person's attendance at a municipality function.

A person who performs services for a municipality or an agency or subdivision of a municipality and who does not receive compensation is not personally liable for a claim based upon an act or omission of the person performed in the discharge of the person's duties, except for acts or omissions which involve intentional misconduct or knowing violation of the law, or for a transaction from which the person derives an improper personal benefit. For purposes of this section, *"compensation"* does not include payments to reimburse a person for expenses.

11. A claim based upon or arising out of an act or omission in connection with an emergency response including but not limited to acts or omissions in connection with emergency response communications services.

This section does not expand any existing cause of action or create any new cause of action against a municipality.

DEATH

(Iowa Code excerpts)

702.8 Death.

"Death" means the condition determined by the following standard: A person will be considered dead if in the announced opinion of a physician, based on ordinary standards of medical practice, that person has experienced an irreversible cessation of spontaneous respiratory and circulatory functions. In the event that artificial means of support preclude a determination that these functions have ceased, a person will be considered dead if in the announced opinion of two physicians, based on ordinary standards of medical practice, that person has experienced an irreversible cessation of spontaneous brain functions. Death will have occurred at the time when the relevant functions ceased.

EMERGENCY TELEPHONE CALLS

(Iowa Code excerpts)

727.5 Obstruction of emergency telephone calls.

An emergency communication is any telephone call or radio transmission to a fire department or police department for aid, or a call or transmission for medical aid or ambulance service, when human life or property is in jeopardy and the prompt summoning of aid is essential. A person who fails to relinquish a telephone or telephone line which the person is using when informed that the phone or line is needed for an emergency call or knowingly and intentionally obstructs or interferes with an emergency call or transmission commits a simple misdemeanor.

727.6 Falsely claiming emergency.

Any person who secures the use of a telephone or telephone line by falsely stating that such telephone or line is needed for an emergency call commits a simple misdemeanor.

EMERGENCY MEDICAL SERVICES TRAINING FUND

(See Iowa Administrative Code 641-Chapter 130)

APPROPRIATIONS (73GA, HF 2371)

For salaries, support, maintenance, miscellaneous purposes, and for not more than the following full-time equivalent positions: $1,014,000 and 5 FTEs.

It is the intent of the general assembly that the moneys appropriated under this paragraph shall be used for the training of emergency medical services (EMS) personnel at the state, county, and local levels.

If a person in the course of responding to an emergency renders aid to an injured person and becomes exposed to bodily fluids of the injured person, that emergency responder shall be entitled to hepatitis testing and immunization in accordance with the latest available medical technology to determine if infection with hepatitis has occurred. The person shall be entitled to reimbursement from the emergency provider fund only if the reimbursement is not available through any employer or third-party payor.

APPROPRIATIONS (73GA, SF 2327)

There is appropriated from the general fund of the state to the Iowa department of public health for the state to the Iowa department of public health for the fiscal year beginning July 1, 1990, and ending June 30, 1991, the following amount, or so much thereof as is necessary, to be used for the purposes designated:

For the acquisition of emergency medical services equipment: $750,000.

1. The funds appropriated under this section shall be allocated to each county based upon the apportionment of funds as follows:

a. 50 percent of the funds is apportioned based upon the area of a county to the total area of all counties.

b. 25 percent of the funds is apportioned based upon the population of the county to the total population of all counties.

c. 25 percent of the funds is apportioned based upon the rural population of the county to the total rural population of all counties.

2. Each county EMS association shall propose a plan for spending the county's allocation and submit the plan to the regional EMS council for its review and comment. The regional EMS council shall review the plan and shall approve, modify, or deny the plan. If a request is denied, the county EMS association may submit a new proposal. Upon approval by the regional EMS council, the Iowa department of public health shall remit the amount approved to the award recipients. Each award of $1 to a county shall require a $1 match by the county or EMS provider. The Iowa department of public health shall provide assistance to the regional EMS council in reviewing the proposals.

3. For the purposes of this section, unless the context otherwise requires:

a. "Area", county EMS association", "EMS provider", "regional EMS council", and "rural population" mean the same as defined in 6421 I.A.C. ch. 130.

b. "Emergency medical services equipment" means defibrillators, nondisposable essential ambulance equipment, as defined by the American college of surgeons, communications pagers, radios, and base repeaters. "Emergency medical services equipment" does not include ambulances, automotive parts, or buildings.

It is the intent of the general assembly to fund an additional $750,000 in fiscal year 1992 for this purpose.

IOWA
EMERGENCY MEDICAL SERVICES
LAW/RULE SUMMARY

IOWA
ADMINISTRATIVE
CODE

EMERGENCY TELEPHONE NUMBERS

(See Iowa Administrative Code excerpts 199–Chapter 22)

EMERGENCY NUMBERS IN TELEPHONE DIRECTORIES

(Iowa Administrative Code 199–Chapter 22 excerpts)

199–22.3(2) Directories. All directories published after the effective date of these rules shall conform to the following:

c. The year of issue shall appear on the front cover and, if space permits, on the back binding. Information pertaining to emergency calls, such as for the police or fire departments, for each exchange listed in the directory shall appear conspicuously on the front side of the first page of the directory. The directory shall also show a summary of the names of listed exchanges with the name of each serving telephone utility next to the exchanges it serves.

MEDICAID AMBULANCE REIMBURSEMENT

(Iowa Administrative Code 441–Chapters 77, 78 and 79 excerpts)

441–77.11 (249A) Ambulance service. Providers of ambulance service are eligible to participate providing they meet the eligibility requirements for participation in the Medicare program (Title XVIII of the Social Security Act).

441–78.11 (249A) Ambulance service. Payment will be approved for ambulance service if it is required by the recipient's condition and if the recipient is transported to the nearest hospital with appropriate facilities or to one in the same locality, from one hospital to another, to the patient's home, or to a skilled nursing home. Payment for ambulance service to the nearest hospital for outpatient service will be approved only for emergency treatment. Ambulance service must be medically necessary and not merely for the convenience of the patient.

78.11(1) Partial payment may be made when an individual is transported beyond the destinations specified, and is limited to the amount that would have been paid had the individual been transported to the nearest institution with appropriate facilities. When transportation is to the patient's home, partial payment is limited to the amount that would have been paid from the nearest institution with appropriate facilities. When a recipient who is a resident of a nursing care facility is hospitalized and later discharged from the hospital, payment will be made for the trip to the nursing care facility where the recipient resides even though it may not in fact be the nearest nursing care facility.

78.11(2) The carrier shall determine that the ambulance transportation was medically necessary and that the condition of the patient precluded any other method of transportation. Payment can be made without the physician's confirmation when:

a. The individual is admitted as a hospital inpatient or in an emergency situation.

b. Previous information on file relating to the patient's condition clearly indicates ambulance service was necessary.

78.11(3) When a patient is transferred from one nursing home to another because of the closing of a facility or from a nursing home to a custodial home because the recipient no longer requires nursing care, the conditions of medical necessity and the distance requirements shall not be applicable. Approval for transfer shall be made by the local office of the department of human services prior to the transfer. When such a transfer is made, the following rate schedule shall apply:

One patient - normal allowance
Two patients - 3/4 normal allowance per patient
Three patients - 2/3 normal allowance per patient
Four patients - 5/8 normal allowance per patient

441–78.13(249A) Transportation to receive medical care.

Payment will be approved for transportation to receive services covered under the program only to the nearest institution or practitioner having appropriate facilities for care of the recipient when the following conditions are met.

78.13(1) The source of the care is located outside the city limits of the community in which the recipient resides; or

78.13(2) The recipient resides in a rural area and must travel to a city to receive necessary care; and

78.13(3) The type of care is not available in the community in which the recipient resides, or the recipient has been referred by the attending physician to a specialist in another community; and

78.13(4) There is no resource available to the recipient through which necessary transportation might be secured free of charge.

78.13(5) Transportation may be of any type and may be provided from any source. When transportation is by car, the maximum payment which may be made will be the actual charge made by the provider for transportation to and from the source of medical care, but not in excess of the rate per mile payable to state employees for official travel. When public transportation is utilized, the basis of payment will be the actual charge made by the provider of transportation, not to exceed the charge that would be made by the most economical available source of public transportation. In all cases where public transportation is reasonably available to or from the source of care and the recipient's condition does not preclude its use, it must be utilized. When the recipient's condition precludes the use of public transportation, a statement to the effect shall be included in the case record.

78.13(6) In the case of a child too young to travel alone, or an adult or child who because of physical or mental incapacity is unable to travel alone, payment subject to the above conditions shall be made for the transportation costs of an escort. The worker is responsible for making a decision concerning the necessity of an escort and recording the basis for the decision in the case record.

78.13(7) When meals and lodging or other travel expenses required in connection with transportation, payment will be subject to the same conditions as for a state employee and the maximum amount payable shall not exceed the maximum payable to a state employee for the same expenses in connection with official travel within the state of Iowa.

78.13(8) When the services of an escort are required subject to the conditions outlined above, payment may be made for meals and lodging, when required, on the same basis as for the recipient.

78.13(9) Payment will not be made in advance to a recipient or a provider of medical transportation.

441-79.1 (249A)

Principles governing reimbursement of providers of medical and health services. The basis of payment for services rendered by providers of services participating in the medical assistance program is either a system based on the provider's allowable costs of operation or a fee schedule. Generally, institutional types of providers such as hospitals and intermediate care facilities are reimbursed on a cost-related basis and practitioners such as physicians, dentists, optometrists, and similar providers are reimbursed on the basis of a fee schedule. Providers of service must accept reimbursement based upon the department's methodology without making any additional charge to the recipient.

79.1(1) *Types of reimbursement.*

a. *Prospective cost-related.* Providers are reimbursed on the basis of a per diem rate calculated prospectively for each participating provider based on reasonable and proper costs of operation. The rate is determined by establishing a base year per diem rate to which an annual index is applied.

b. *Retrospective cost-related.* Providers are reimbursed on the basis of a per diem rate calculated retrospectively for each participating provider based on reasonable and proper costs of operation with suitable retroactive adjustments based on submission of financial and statistical reports by the provider. The retroactive adjustment represents the difference between the amount received by the provider during the year for covered services and the amount determined in accordance with an accepted method of cost apportionment (generally the Medicare principles of apportionment) to be the actual costs of service rendered medical assistance recipients.

c. *Fee schedules.* Fees for the various procedures involved are determined by the department with advice and consultation from the appropriate professional group. The fees are intended to reflect the amount of resources (time, training, experience) involved in each procedure. Individual adjustments will be made periodically to correct any inequity or to add new procedures or eliminate or modify others. Of product costs is involved in addition to service, reimbursement is based either on a fixed fee, wholesale cost, or on actual acquisition costs of the product to the provider, or product cost is included as part of the fee schedule. Providers on fee schedules are reimbursed the lower of:

(1) The actual charge made by the provider of service.

(2) The maximum allowance under the fee schedule for the item of service in question. Payment levels for fee schedule providers of service will be increased on an annual basis by an economic index reflecting overall inflation as well as inflation in office practice expenses of the particular provider category involved to the extent data is available. Annual increases will be made beginning July 1, 1988.

There are some variations in this methodology which are applicable to certain providers. These are set forth below in subrules 79.1(3) to 79.1(9).

Copies of fee schedules in effect for the providers covered by fee schedules can be obtained after July 1, 1987, by contacting the department's fiscal agent at the following address: UNISYS, P.O. Box 10394, Des Moines, Iowa 50306-0394, 515/263-3984.

79.1(2) *Basis of reimbursement of specific provider categories.*

Provider category	Basis of reimbursement	Upper limit
Ambulance	Fee schedule	Fee schedule

SNOWMOBILE AMBULANCE SLED FUNDING

(Iowa Administrative Code 571–Chapter 28 excerpts)

571–28.1 (321G) Purpose and intent.

This program provides funds from snowmobile registrations to local political subdivisions for the development, maintenance of, and acquisition of land for snowmobile trails and appurtenant facilities on lands which may be in other than state ownership. This rule is to clarify procedures used in implementing agreements under Iowa Code chapter 28E between the department of natural resources, hereinafter referred to as the department, and other public agencies. All trails and facilities established with the use of revenues under this program shall be open to use by the general public free of charge.

571–28.2(321G) Distribution of funds.

The annual local share of state snowmobile registration funds shall be distributed in accordance with rule 28.3(321G) and upon execution of agreements under Iowa Code chapter 28E.

571–28.3(321G) Administration of snowmobile fund allocation to governmental subdivisions.

28.3(1) *Application.* Applications for snowmobile cost-share money will be made on application forms available from the department. The application must be completed and signed by the chairperson of the applying governmental subdivision. The application must be accompanied by a copy of the official minutes of the meeting at which the request was approved.

28.3(2) *Application deadline.* Applications for snowmobile fund money must be received by the department and postmarked no later than 12 midnight, July 1 of each year. This deadline will become effective on July 1, 1986. Applications received after that date will be returned to the submitting agency and will not be considered for cost-share money for that year. Application forms will be provided on request from the department.

28.3(3) *Review and selection committee.* The review and selection committee will be comprised of the following:

1. Chief, governmental liaison bureau or designee, department of natural resources.
2. Chief, planning bureau or designee, department of natural resources.
3. Chief, budget and grant bureau or designee, department of natural resources.
4. Chairperson, Iowa association of county conservation board employees or designee.
5. Chairperson, Iowa association of county conservation boards or designee.
6. Two representatives appointed by the chairperson, Iowa state snowmobile association.

28.3(4) *Project selection.* The snowmobile cost-share committee will meet July 15 or closest work day at the central office, department of natural resources. Those projects that have been inspected and approved as safe by the department's conservation officer and, where necessary, have been designated as snowmobile trails by the county board of supervisors or the city council, will be reviewed and prioritized. Primary considerations for establishing priority will include:

1. Average snowfall.
2. Addition to existing program or new program.
3. Miles of trail.
4. Trail diversity.
5. For subdivisions already participating, previous performance in grant program.
6. Number of snowmobiles.
7. Average annual number of days with snow cover exceeding one inch.

28.3(5) *Director's review.* The director will review committee selections and may reject any application selected by the committee for funding.

28.3(6) *Items included in snowmobile fund program.*

5. Ambulance sled. Actual cost to $750 and ninety percent over the figure per sled.

571-28.4(321G) Use of funded items.

Manufactured products or machinery purchased by public agencies with state assistance under this program shall be used only for the purpose of establishing or maintaining snowmobile trails, or emergency rescue operations where applicable.

AIDS TRAINING PROGRAMS

(Iowa Administrative Code excerpts 641-Chapter 11)

641-11.35(72GA,SF2157) Purpose. The purpose is to describe what constitutes an approved training program, the required content of acquired immune deficiency syndrome training programs and to identify the groups of personnel involved.

11.35(1) Nonemergency personnel. All supervisory and patient care personnel of any agency listed below shall complete a minimum of two hours of training concerning acquired immune deficiency syndrome-related conditions:

a. A licensed hospice,

b. A homemaker-home health aide provider agency which receives state homemaker-home health aide funds, or

c. An agency which provides respite care services and receives funds.

NOTE: New employees shall complete the training within six months of their initial employment. Existing employees shall complete the training on or before January 1, 1989. AIDS education programs conducted on or after January 1, 1987, shall count as satisfying the two-hour requirement when attendance and course content can be verified.

11.35(2) Content. Training programs must address the following topics:

a. HIV disease processes,

b. Signs and symptoms,

c. Transmission,

d. High risk activities,

e. Prevention recommendations, and

f. Universal precautions according to the following Morbidity and Mortality Weekly Reports published by the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Atlanta, Georgia 30333:

(1) Volume 36, Number 2S, Supplement, dated August 21, 1987, entitled "Recommendations for Prevention of HIV Transmission in Health-Care Settings," and

(2) Volume 37, Number 24, dated June 24, 1988, entitled "Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and Other Bloodborne Pathogens in Health-Care Settings."

11.35(3) Emergency and law enforcement personnel. All emergency medical services personnel, firefighters, and law enforcement personnel shall complete a minimum of two hours of training concerning acquired immune deficiency syndrome-related conditions and the prevention of human immunodeficiency virus infection.

11.35(4) Content. Training programs must address the following topics:

a. HIV disease processes,
b. Signs and symptoms,
c. Transmission,
d. High risk activities,
e. Prevention recommendations, and
f. Universal precautions according to the following Morbidity and Mortality Weekly Reports published by the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Atlanta, Georgia 30333:

(1) Volume 36, Number 2S, Supplement, dated August 21, 1987, entitled "Recommendations for Prevention of HIV Transmission in Health-Care Settings," and

(2) Volume 37, Number 24, dated June 24, 1988, entitled "Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and Other Bloodborne Pathogens in Health-Care Settings."

MASS GATHERINGS - AMBULANCES

(Iowa Administrative Code 641--Chapter 19 excerpts)

641--19.1 (135) Definitions. For the purpose of these rules, the following terms shall have the meaning indicated in this rule:

"*Mass gathering*" means an outdoor assembly which may be attended by more than 1,000 attendants for a period of more than 12 hours duration. A mass gathering does not mean an event which is conducted or sponsored by a governmental unit on publicly owned property or an event which is held within a permanent building constructed for the purpose of conducting mass gathering activities.

641--19.4 (135) Requirements. The following shall be provided and in operation at least 24 hours before the mass gathering is scheduled to begin.

19.4(5) *Medical facilities and personnel.* Each site shall be provided with an adequately staffed first aid station. Arrangements shall be made for ambulance service. There shall be some means of summoning an ambulance if required. The first aid station shall be readily accessible to ambulances.

BEST COPY AVAILABLE

Note: The Department of Public Health has filed extensive amendments to this chapter. Contact the EMS Section for current information.

EMERGENCY MEDICAL SERVICES TRAINING FUND

(Iowa Administrative Code 641-Chapter 130)

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641--130.1 (72GA,SF2310) **Definitions.** For the purpose of these rules, the following definitions shall apply:

"Advanced EMT" means an individual trained in advanced emergency medical care who is currently certified as an advanced EMT by the Iowa board of medical examiners.

"Ambulance service" means any privately or publicly owned service program which utilizes ambulances in order to provide patient transportation and emergency medical care at the scene of an emergency or while enroute to a hospital.

"Applicant" means an individual or public or private entity which has submitted an application for "Special EMS Training Project" funds.

"Area" means the number of square miles in a county listed in the "1980 Census of Population and Housing," dated March, 1981, published by the Iowa department of economic development.

"CEHs" means "continuing education hours" which are based upon a minimum of 50 minutes of training per hour.

"Conferences" means continuing education courses which provide at least 7 CEHs.

"Continuing education" means approved training which is received after becoming certified as an EMS provider to maintain skills and knowledge and to satisfy renewal of certification requirements.

"County EMS association" means a countywide group of EMS providers and various agency and organization representatives and consumers who advise the county board of supervisors their designee on EMS needs and objectives.

"Department" means the Iowa department of public health.

"Designee" means a county government agency or a board, commission or committee which has entered into an agreement with the county board of supervisors pursuant to Iowa Code, chapter 28E.

"Director" means the director of the Iowa department of public health.

"Emergency medical technician-ambulance" means an individual trained in patient assessment, the recognition of signs and symptoms regarding illness or injury, and the use of proper procedures when rendering basic emergency medical care, and who is currently certified as an emergency medical technician-ambulance by the department.

"Emergency rescue technician" means an individual trained in various rescue techniques including rescue from heights and depths, extrication from automobiles, agricultural rescue, and rescue from water and special hazards, and who is currently certified as an emergency rescue technician by the department.

"EMS" means "emergency medical services."

"EMS provider" means a FR, ERT, EMT-A, advanced EMT, paramedic or other health care practitioner involved in the provision of emergency medical care.

"EMT-A" means "emergency medical technician-ambulance."

"ERT" means "emergency rescue technician."

"First responder" means an individual trained in patient-stabilizing techniques, through the use of initial basic emergency medical care procedures and skills prior to the arrival of an ambulance or rescue squad, and who is currently certified as a first responder by the department.

"First response service" means any privately or publicly owned service program which does not provide patient transportation and utilizes only first response vehicles to provide emergency medical care at the scene of an emergency.

"FR" means "first responder."

"Paramedic" means an individual trained in advanced emergency medical care and who is currently certified as a paramedic by the Iowa board of medical examiners.

"Regional EMS council" means a multicounty non-profit corporation whose purpose is to facilitate EMS development on a regional basis.

"Rescue service" means any privately or publicly owned service program which does not provide patient transportation and utilizes only rescue vehicles to provide emergency medical care and extrication at the scene of an emergency.

"Rural population" means the number of rural residents listed in the "1980 Census of Population and Housing," dated March, 1981, published by the Iowa department of economic development.

"Service program" means any emergency medical care ambulance, rescue or first response service.

"Training" means EMS related courses designed and intended for EMS providers.

"Training aid" means an item used in EMS training and includes, but is not limited to: slides, films, mannequins, emergency care devices, books and other items pertinent and necessary for training purposes.

"Training program" means a facility providing training for EMS providers and which has received approval by the department as a basic care training program or by the Iowa board of medical examiners as an advanced care training program.

641–130.2 (72GA,SF2310) Emergency medical services training fund.

130.2(1) EMS training funds shall be used for training-related purposes only.

130.2(2) EMS training funds are intended to supplement rather than supplant EMS funds that would otherwise be available at the state, county or local level.

641–130.3 (72GA,SF2310) Allocation of EMS training funds to counties.

130.3(1) Funds for training-related purposes at the county and local level are available on a justifiable need basis. The maximum county funding shall be determined by the following formula:

a. Fifty percent of the funds will be allocated according to each county's rural population, and
b. Fifty percent of the funds will be allocated according to each county's area.

130.3(2) Each county requesting funds shall submit an application to the department. If by March 1 of each year, the contracted funds total less than the total amount available for county funding, the remaining funds shall be made available on an as needed basis through a supplemental application process.

130.3(3) The county board of supervisors or their designee shall be responsible for the administration of the county's EMS training funds.

130.3(4) A county may use funds to train members of an ambulance, rescue, or first response service located in a neighboring county if service is provided on a regular basis to residents of the funding county.

130.3(5) Each county shall have a county EMS association to provide the county board of supervisors or their designee with advice relating to EMS funding needs and objectives.

130.3(6) Items which are eligible for EMS fund expenditures include:

a. Reimbursement of EMS training costs for tuition and fees and course materials for persons who successfully pass the certification examinations;
b. Payment of EMS continuing education costs for tuition and other fees and course materials;
c. Payment for EMS training aids (not to exceed $300 per item). NOTE: The $300 may be applied toward training aids costing more than $300.

130.3(7) Costs which are not eligible for funding include the following:

a. Building and construction;
b. Certification/recertification fees;
c. Debt amortization;
d. Examination fees;
e. Land;

f. Nontraining related equipment;
g. Personnel costs;
h. Rent;
i. Travel;
j. Utilities;
k. Other operating expenses.

641—130.4 (72GA,SF2310) Application and review process.

130.4(1) Application forms are available upon request from the Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075.

130.4(2) Each application shall include, as a minimum:

a. A complete description of the existing county EMS system including any interactions with other counties.

b. A completed survey (needs assessment) for each ambulance, rescue, and first response service in the county.

c. A description of the proposed use of the funds.

d. A projected description of the county EMS system's future objectives.

130.4(3) Applications must be approved by the county board of supervisors or their designee and submitted to the appropriate regional EMS council for review and comment.

130.4(4) The regional EMS council may refer the application back to the county for further information or clarification if necessary.

130.4(5) The department may approve or deny an application in whole or in part.

130.4(6) If an application is approved, the department shall enter into a contract with the county to provide EMS training-related funds.

130.4(7) Contract funds will be provided to counties no more often than once a month. Monthly expenditure reports and quarterly progress reports shall be submitted to the department.

130.4(8) Contract funds must be obligated prior to May 31 and expended prior to August 30 of each year. No carryover of funds is permitted between fiscal years.

641—130.5 (72GA,SF2310) Special EMS training projects.

130.5(1) Special EMS training funds are available for projects at the regional and state level.

130.5(2) The department may establish special EMS training projects which will serve the entire state.

130.5(3) Other special EMS training projects will be considered for approval according to the merits of the application, the date the application is received and the availability of funds. Allowable projects include, but may not be limited to:

a. Regional EMS councils that apply for training aids to be made available for temporary or permanent loan to ambulance, rescue, or first response services, hospitals, training programs or other appropriate locations within their region. To avoid duplication and maximize the use of these funds, applications for training aids from regional EMS councils may be given priority.

b. Sponsors of continuing education conferences that apply for funding to reduce the cost to attendees.

130.5(4) Applicants shall complete and submit a "Special EMS Training Project Application" available from the Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075.

641—130.6 (72GA,SF2310) Application denial or partial denial—appeal.

130.6(1) Denial or partial denial of an application shall be effected in accordance with the requirements of Iowa Code section 17A.12. Notice to the applicant of denial or partial denial shall be served by restricted certified mail, return receipt requested, or by personal service.

130.6(2) Any request for appeal concerning denial or partial denial shall be submitted by the aggrieved party in writing to the department by certified mail, return receipt requested, within 30 days of the receipt of the department's notice. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075. Prior to or at the hearing, the department may rescind the denial or partial denial. If no request for appeal is received within the 30-day time period, the department's notice of denial or partial denial shall become the department's final agency action.

130.6(3) Upon receipt of an appeal that meets contested case status, the appeal shall be forwarded within five working days to the department of inspections and appeals pursuant to the rules adopted by that agency regarding the transmission of contested cases. The information upon which the adverse action is based and any additional information which may be provided by the aggrieved party shall also be provided to the department of inspections and appeals.

130.6(4) The hearing shall be conducted according to the procedural rules of the department of inspections and appeals found in 481--Chapter 4, Iowa Administrative Code.

130.6(5) When the hearing officer makes a proposed decision and order, it shall be served by restricted certified mail, return receipt requested, or delivered by personal service. That proposed decision and order then becomes the department's final agency action without further proceedings ten days after it is received by the aggrieved party unless an appeal to the director is taken as provided in subrule 130.6(6).

130.6(6) Any appeal to the director for review of the proposed decision and order of the hearing officer shall be filed in writing and mailed to the director by certified mail, return receipt requested, or delivered by personal service within ten days after the receipt of the hearing officer's proposed decision and order by the aggrieved party. A copy of the appeal shall also be mailed to the hearing officer. Any request for an appeal shall state the reason for appeal.

130.6(7) Upon receipt of an appeal request, the hearing officer shall prepare the record of the hearing for submission to the director. The record shall include the following:

a. All pleadings, motions, and rules.
b. All evidence received or considered and all other submissions by recording or transcript.
c. A statement of all matters officially noticed.
d. All questions and offers of proof, objections and rulings on them.
e. All proposed findings and exceptions.
f. The proposed decision and order of the hearing officer.

130.6(8) The decision and order of the director becomes the department's final agency action upon receipt by the aggrieved party and shall be delivered by restricted certified mail, return receipt requested, or by personal service.

130.6(9) It is not necessary to file an application for a rehearing to exhaust administrative remedies when appealing to the director or the district court as provided in Iowa Code section 17A.19. The aggrieved party to the final agency action of the department who has exhausted all administrative remedies may petition for judicial review of that action pursuant to Iowa Code chapter 17A.

130.6(10) Any petition for judicial review of a decision and order shall be filed in the district court within 30 days after the decision and order becomes final. A copy of the notice of appeal shall be sent to the department by certified mail, return receipt requested, or by personal service. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075.

130.6(11) The party who appeals a final agency action to the district court shall pay the cost of the preparation of a transcript of the contested case hearing for the district court.

TRAINING AND CERTIFICATION OF FIRST RESPONDERS, EMERGENCY RESCUE TECHNICIANS AND EMERGENCY MEDICAL TECHNICIANS - AMBULANCE

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641--131.1 (147) Definitions. For the purpose of these rules, the following definitions shall apply:

"*Basic emergency medical care*" means those prehospital skills and noninvasive techniques included in each basic course curriculum. It does not include medical procedures defined as "advanced emergency medical care" pursuant to Iowa Code section 147A.1.

"*Basic emergency medical care personnel*" means any first responder, emergency rescue technician, or emergency medical technician-ambulance currently certified by the department.

"*Board*" means the state board of medical examiners appointed pursuant to Iowa Code section 147.14, subsection 2.

"*CEHs*" means "continuing education hours," which are based upon a minimum of 50 minutes of training per hour.

"*Continuing education*" means training approved by the department which is obtained by a certified basic emergency medical care provider to maintain, improve, or expand relevant skills and knowledge and to satisfy renewal of certification requirements.

"*Course completion date*" means the date of the final classroom session of a basic emergency medical care provider course.

"*Course coordinator*" means an individual who has been assigned by the training program to coordinate the activities of a basic emergency medical care provider course.

"*CPR*" means training and certification in cardiopulmonary resuscitation and obstructed airway procedures according to American Heart Association or American Red Cross standards. This includes one rescuer, two rescuer, and child/infant cardiopulmonary resuscitation and adult and child/infant obstructed airway procedures.

"*Department*" means the Iowa department of public health.

"*Director*" means the director of the Iowa department of public health.

"*Emergency medical technician-ambulance*" means an individual who has successfully completed, as a minimum, the United States Department of Transportation's Emergency Medical Technician-Ambulance curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an EMT-A.

"*EMS*" means "emergency medical services."

"*EMS*-I" means "emergency medical services-instructor."

"*EMS instructor*" means an individual who has successfully completed the United States Department of Transportation's EMS Instructor curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an EMS-I.

"*EMT-A*" means "emergency medical technician-ambulance."

"*First responder*" means an individual who has successfully completed the United States Department of Transportation's First Responder curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an FR.

"*FR*" means "first responder."

"*Outreach course coordinator*" means an individual who has been assigned by the training program to coordinate the activities of a basic emergency medical care provider course held outside the training program facilities.

"*Physician*" means any individual licensed under Iowa Code chapter 148, 150, or 150A.

"*Preceptor*" means an individual who has been assigned by the training program, clinical facility or service program to supervise students while the students are completing their clinical or field experience. A preceptor must be an emergency medical care provider certified at the level being supervised or higher, or must be licensed as a registered nurse, physician's assistant or physician.

"*Specialty certifications*" means a nonmedical certification in an area related to emergency medical care including, but not limited to, emergency rescue technician and emergency medical services-instructor.

"*Student*" means any individual enrolled in a training program and participating in the didactic, clinical, or field experience portions.

"*Training program*" means an area vocational school, an area community college or a law enforcement academy approved by the department to conduct basic emergency medical care training. Law enforcement academies shall be limited to FR training for law enforcement trainees. Hospital-based training programs approved by the Iowa board of medical examiners to train advanced emergency medical care personnel may also receive approval from the department to train basic emergency medical care personnel.

"*Training program director*" means an appropriate health care professional (full-time educator or practitioner of emergency or critical care) assigned by the training program to direct the operation of the training program.

"*Training program medical director*" means any physician licensed under Iowa Code chapter 148, 150, or 150A who is responsible for directing a basic emergency medical care training program.

641-131.2 (147) Reserved.

641-131.3 (147) Basic emergency medical care personnel – requirements for enrollment in training programs.

131.3(1) To be enrolled in a training program an applicant shall be:

a. At least 17 years of age at the time of enrollment.

b. Able to speak, write and read English.

c. Physically able to perform the functions of a basic emergency medical care provider as appropriate.

d. Currently certified pursuant to Iowa Code section 147.161 as an FR or EMT-A or currently certified pursuant to Iowa Code subsection 147A.4(2) as an advanced emergency medical care provider if enrolling in an ERT course.

131.3(2) With training program approval, persons who are not enrolled in a basic emergency medical care provider course may audit those courses. They shall not be eligible to take the practical and written certification examinations.

641-131.4 (147) Basic emergency medical care providers – certification, renewal standards and procedures, and fees.

131.4(1) Application and examination.

a. Applicants shall complete an "EMS Student Registration" form at the beginning of the course. Courses which are completed within two weeks are exempt from this requirement. "EMS Student Registration" forms are provided by the department.

b. "EMS Student Registration" forms shall be forwarded to the department by the training program no later than two weeks after the beginning of the course.

c. Upon satisfactory completion of the course and all training program requirements, the student shall be recommended by the training program to take the certification examinations.

d. The practical examination shall be administered by the training program using the standards and forms provided by the department. The training program shall notify the department at least two weeks prior to the administration of a practical examination.

e. To be eligible to take the written examination, the student shall pass the practical examination.

f. To be eligible to take the practical examination, the student shall be currently certified in CPR.

g. To be eligible for certification, the student shall have a high school diploma or equivalent.

h. The student shall submit an "EMS Certification Application" form. "EMS Certification Application" forms are provided by the department.

i. When a student's "EMS Student Registration" or "EMS Certification Application" is referred for investigation, the student shall not be certified until approved by the department.

j. The written examinations shall be administered by the department at times and places scheduled by the department.

k. No oral certification examinations shall be permitted.

l. Practical examination fees shall be determined by the training program.

m. A student who fails the practical certification examination shall be required to repeat only those stations which were failed and shall have two additional opportunities to attain a passing score. The student may repeat the failed examination stations on the same day as determined by the training program.

n. A student who fails to attain at least a 70 percent overall score on the written certification examination shall have two additional opportunities to complete the entire examination and attain a passing score.

o. A student who fails to pass the practical or written certification examination on the third attempt and who wishes to pursue certification shall repeat the entire course.

p. All examination attempts shall be completed within one year of the initial course completion date.

q. Examination scores shall be confidential except that they may be released to the training program which provided the training or released in a manner which does not permit the identification of an individual.

r. Applicants for EMS-I certification shall:

(1) Be currently certified as a basic or advanced emergency medical care provider or currently licensed as a registered nurse, physician assistant or physician.

(2) Successfully complete an EMS-Instructor course sponsored by the department.

(3) Successfully pass the written and practical examinations administered by the department.

131.4(2) Multiple certificates and renewal.

a. With the exception of specialty certifications, only one certificate issued by the department or board shall be considered active. That certificate shall be for the individual's highest level of certification. Any lower levels of certification shall be considered inactive.

b. A lower level certificate may be issued if the individual fails to renew the higher level of certification or voluntarily chooses to move from a higher level to a lower level. To be issued a certificate in these instances, an individual shall:

(1) Complete all applicable continuing education requirements for the lower level during the certification period.

(2) Complete and submit to the department an "Application for Renewal of Certification" and the applicable fee.

c. A denial, probation, suspension or revocation imposed upon an individual certificate holder by the department shall be considered applicable to all certificates issued to that individual by the department.

131.4(3) Renewal of certification.

a. A certificate shall be valid for two years from issuance unless specified otherwise on the certificate or unless sooner suspended or revoked.

b. All continuing education requirements shall be completed during the certification period prior to the certificate's expiration date. Failure to complete the continuing education requirements prior to the expiration date shall result in lapsed certification.

c. No more than 90 days after the expiration date shall be allowed for the submission (based upon the postmark date) of the "Application for Renewal of Certification" booklet to document completion of continuing education requirements. After 90 days, the certification shall be considered lapsed and the individual shall not function as a basic emergency medical care provider.

(1) An individual who completes the required continuing education during the certification period, but fails to submit the "Application for Renewal of Certification" within 90 days after the expiration date, shall be required to submit a late fee of $30 to obtain renewal of certification.

d. An individual who has not completed the required continuing education during the certification period and is seeking to reinstate a lapsed certificate shall:

(1) Complete continuing education courses equivalent to the renewal requirements for that particular level of certification within six years following the certificate's expiration date. Refer to Table 1 for total number of hours required.

(2) Meet all applicable eligibility requirements.

(3) Submit an "EMS Reinstatement Application" and the applicable fees to the department.

(4) Pass the appropriate practical and written certification examinations.

TABLE 1

	REQUIRED CONTINUING EDUCATION HOURS FOR REINSTATEMENT (including required topics)	
CERTIFICATION LAPSED FOR	**FR**	**EMT-A**
Less than 2 years	14	24
2 - 4 years	28	48
4 - 6 years	42	72

e. If certification has been expired for more than six years, the individual shall repeat the entire course, pass the practical and written certification examinations, meet all applicable eligibility requirements and submit the applicable fees and forms to again become certified.

f. If an individual is unable to complete the required continuing education during the certification period due to an illness or injury, a one-year extension of certification may be issued upon submission of a signed statement from a physician and approval by the department.

131.4(4) Renewal standards. The "Application for Renewal of Certification" and instructions for renewal shall be mailed with the certificate to the certificate holder. To be eligible for renewal, the certificate holder must:

a. Have signed and submitted an "Application for Renewal of Certification" and the applicable fee within 90 days after the certificate's expiration date.

b. Have a current CPR certificate or a signed and dated statement from a certified CPR instructor that documents current certification in CPR.

c. Have completed the continuing education requirements during the certification period including:

(1) FR - 14 hours of approved continuing education including at least one hour in each of the following required topic areas:

1. Infectious diseases
2. Abuse (child and dependent adult)
3. Trauma emergencies (should include skills practice)
4. Medical emergencies (should include skills practice)

(2) EMT-A - 24 hours of approved continuing education including at least one hour in each of the following required topic areas:

1. Infectious diseases
2. Abuse (child and dependent adult)
3. Trauma emergencies (should include skills practice)
4. Medical emergencies (should include skills practice)

(3) Specialty certification (must also maintain medical certification or appropriate licensure)

1. ERT - at least one hour in each of the following required topic areas:
   Agricultural/industrial rescue
   Rescue equipment/techniques
   Special hazards
   Vehicle rescue
2. EMS-I -- attend at least one EMS-I workshop sponsored by the department.

131.4(5) Continuing education approval. Continuing education hours (CEHs) may be issued for the following types of training during the certification period:

(a) Courses which are based upon the board's or the department's curricula for EMS providers and other courses pertinent to basic emergency medical care. Approved self-study and video courses are permitted (4 hours maximum for FR; 8 hours maximum for EMT-A.

(b) In-hospital clinical experience in areas relating to emergency medical care (4 hours maximum for FR; 8 hours maximum for EMT-A.

(c) Disaster drills (4 hours maximum).

(d) Continuing education course instructors will be granted the appropriate number of CEHs for the courses taught.

(e) EMS course instructors will be granted the appropriate number of CEHs for the courses taught. When identical courses are taught, CEHs will be granted for the first course only.

(f) Practical certification examination evaluation (6 hours maximum).

(g) EMS course attendance (or audit) will qualify as continuing education based upon the number of hours attended (or audited).

(h) Basic care continuing education hours which have been approved pursuant to Iowa Administrative Code 641--132.6 (147A), shall be considered approved for basic emergency medical care personnel.

131.4(6) Out-of-state continuing education. Out-of-state continuing education courses will be accepted for CEHs if they meet the criteria in subrule 131.4(5) and have been approved for basic emergency medical care personnel in the state in which the courses were held. A copy of course completion certificates (or other verifying documentation) shall be submitted to the department with the "Application for Renewal of Certification".

131.4(7) CEHs shall not be approved for:

a. CPR course attendance, CPR course instruction or CPR instructor training.

b. Courses or portions of courses which are beyond the scope of training and authority for basic emergency medical care personnel.

131.4(8) Fees.

a. No fees shall be collected for the written examination, certification or recertification, except as provided in paragraph "b."

b. The following fees shall be collected by the department:

(1) Endorsement certification fee - $30.

(2) Reinstatement fee - $30.

(3) Late fee - $30.

131.4(9) **Certification through endorsement.** An individual currently certified by another state or by the National Registry of EMTs must also possess a current Iowa certificate to be considered certified in this state. The department shall contact the state of certification or the National Registry of EMTs to verify certification and good standing. To receive Iowa certification, the individual shall:

(a) Complete and submit the "EMS Endorsement Application" available from the department.

(b) Provide verification of current certification in another state or with the National Registry of EMTs.

(c) Provide verification of current certification in CPR.

(d) Pass the appropriate Iowa practical and written certification examinations in accordance with subrule 131.4(1).

(e) Meet all other applicable eligibility requirements necessary for Iowa certification pursuant to these rules.

(f) Submit all applicable fees to the department.

(g) An individual certified through endorsement must satisfy the renewal and continuing education requirements set forth in subrule 131.4(4) to renew Iowa certification.

641–131.5 (147) Training programs – standards, application, inspection and approval.

131.5(1) Curricula.

a. The training program shall use, as a minimum, the course curricula approved by the board and shall include, as a minimum, the following course components:

(1) First responder course:

1. Forty hours of classroom instruction.

2. Clinical experience as may be required by the training program.

3. Ambulance/rescue field experience as may be required by the training program.

(2) Emergency rescue technician course:
1. Forty hours of classroom instruction.
2. Clinical experience as may be required by the training program.
3. Ambulance/rescue field experience as may be required by the training program.
(3) Emergency medical technician-ambulance course:
1. One hundred two hours of classroom instruction.
2. Eighteen hours of clinical time.
3. Ambulance/rescue field experience as may be required by the training program.

b. The training program may waive portions of the required training by documenting equivalent training and what portions of the course have been waived for equivalency.

131.5(2) Reserved.

131.5(3) Clinical or field experience resources. If clinical or field experience resources are located outside the framework of the training program, written agreements for such resources shall be obtained by the training program.

131.5(4) Facilities.

a. There shall be adequate classroom, laboratory, and practice space to conduct the training program. A library with reference materials on emergency and critical care shall also be available.

b. Opportunities for the student to accomplish the appropriate basic skill competencies in the clinical environment shall be ensured. The following hospital units should be available for clinical experience for each training program as required in subrule 131.5(1):
(1) Emergency department;
(2) Intensive care unit or coronary care unit or both;
(3) Operating room and recovery room;
(4) Pediatric unit;
(5) Labor and delivery suite, and newborn nursery; and
(6) Psychiatric unit.

131.5(5) Staff.

a. The training program medical director shall be a physician who is knowledgeable in EMS.

b. A training program director shall be appointed who is an appropriate health care professional. This individual shall be a full-time educator or a practitioner in emergency or critical care. Current EMS instructor certification is also recommended, but not mandatory.

c. Effective January 1, 1992, the course coordinators and the outreach course coordinators used by the training program shall be currently certified as EMS instructors.

d. The instructional staff shall be comprised of physicians, nurses, pharmacists, advanced emergency medical care personnel, or other health care professionals who have appropriate education and experience in emergency and critical care. Current EMS instructor certification is also recommended, but not mandatory.

e. Preceptors shall be assigned in each of the clinical units in which basic emergency medical care students are obtaining clinical experience and field experience. The preceptors shall supervise student activities to ensure the quality and relevance of the experience. Student activity records shall be kept and reviewed by the immediate supervisor(s) and by the program director and course coordinator.

f. If a training program's medical director resigns, the training program director shall report this to the department and provide a curriculum vitae for the medical director's replacement. A new course shall not be started until a qualified medical director has been appointed.

g. The training program shall maintain records for each instructor used which include, as a minimum, the instructor's qualifications.

h. The training program is responsible for ensuring that each course instructor is experienced in the area being taught and adheres to the course curricula.

i. The training program shall ensure that each practical examination evaluator and mock patient are familiar with the practical examination requirements and procedures.

131.5(6) Advisory committee. An advisory committee which includes training program representatives and other groups such as affiliated medical facilities, local medical establishments, and ambulance, rescue and first response service programs is recommended.

131.5(7) Student records. The training program shall maintain an individual record for each student. Training program policy and department requirements will determine contents. These requirements may include:

a. Application;

b. Current certifications;

c. Student record or transcript of hours and performance (including examinations) in classroom, clinical, and field experience settings, as appropriate.

131.5(8) Selection of students. Students shall be selected using, as a minimum, the prerequisites outlined in subrule 131.3(1).

131.5(9) Students.

a. Students may perform any procedures and skills that certified basic emergency medical care personnel may perform with direct field supervision by an appropriately certified basic or advanced emergency medical care provider.

b. Students shall not be substituted for personnel of any affiliated medical facility or service program, but may be employed while enrolled in the training program.

131.5(10) Financing and administration.

a. There shall be sufficient funding available to the training program to ensure that each class started can be completed.

b. Tuition charged to students shall be accurately stated.

c. Advertising for training programs shall be appropriate.

d. The training program shall provide to each student, within two weeks of the course starting date, a guide which outlines as a minimum:

(1) Course objectives.

(2) Minimum acceptable scores on interim testing.

(3) Attendance requirements.

(4) Disciplinary actions that may be invoked and the reasons for them.

131.5(11) Training program application, inspection and approval.

a. An applicant seeking initial or renewal training program approval shall use the "EMS Training Program Application" provided by the department. The application shall include, as a minimum:

(1) Appropriate officials of the applicant;

(2) Evidence of availability of clinical resources;

(3) Evidence of availability of physical facilities;

(4) Evidence of qualified faculty;

(5) Qualifications and major responsibilities of each faculty member;

(6) Policies used for selection, promotion, and graduation of trainees;

(7) Practices followed in safeguarding the health and well being of trainees, and patients receiving emergency medical care within the scope of the training program; and

(8) A needs assessment which justifies the need for the training program.

c. An on-site inspection of the applicant's facilities and clinical resources will be performed. The purpose of the inspection is to examine educational objectives, patient care practices, facilities and administrative practices, and to prepare a written report for review.

d. No person shall interfere with the inspection activities of the department or its agents. Interference with or failure to allow an inspection may be cause for disciplinary action regarding training program approval.

e. Representatives of the applicant may be required to meet with the department.

f. Training program approval shall not exceed two years.

g. The training program shall notify the department, in writing, of any change in ownership or control within 30 days.

641–131.6 (147A) Continuing education providers – approval, record keeping and inspection.

131.6(1) Continuing education courses for basic emergency medical care personnel may be approved by the department, the board or a training program.

131.6(2) A training program may conduct continuing education courses (utilizing appropriate instructors) which are within the scope of training and authority for emergency medical care personnel.

a. Each training program shall assign a sponsor number to each continuing education course using an assignment system approved by the department.

b. Each training program shall maintain a student record that includes, as a minimum:

Name
Certification number
Address
Social security number

c. Each training program shall submit to the department the "Approved EMS Continuing Education" form on a quarterly basis.

131.6(3) Record keeping and record inspection.

a. The department may request additional information or inspect the records of any continuing education provider currently approved or who is seeking approval to ensure compliance or to verify the validity of any training program application.

b. No person shall interfere with the inspection activities of the department or its agents. Interference with or failure to allow an inspection may be cause for disciplinary action regarding training program approval.

641–131.7 (147) Denial, probation, suspension or revocation of basic emergency medical care personnel certificates or renewal.

131.7(1) The department may deny an application for issuance or renewal of a basic emergency medical care provider certificate, or place on probation, suspend or revoke the certificate when it finds that the applicant or certificate holder has committed any of the following acts or offenses:

a. Negligence in performing emergency medical care.

b. Failure to follow the directions of supervising physicians or their designees.

c. Rendering advanced emergency medical care.

d. Fraud in procuring certification or renewal.

e. Professional incompetency.

f. Knowingly making misleading, deceptive, untrue or fraudulent representations in the practice of a profession or engaging in unethical conduct or practice harmful or detrimental to the public. Proof of actual injury need not be established.

g. Habitual intoxication or addiction to drugs.

h. Falsification of medical records.

i. Fraud in representation as to skill, ability or certification.

j. Willful or repeated violations of Iowa Code section 147.161 or these rules.

k. Violating a statute of this state, another state, or the United States, without regard to its designation as either a felony or misdemeanor, which relates to the provision of emergency medical care. A certified copy of the record of conviction or plea of guilty is conclusive evidence of the violation.

l. Having certification to practice advanced emergency medical care suspended or revoked, or having other disciplinary action taken pursuant to Iowa Code section 147A.7 or the rules implementing that section. A certified copy of the record or order of suspension, revocation or disciplinary action is conclusive or prima facie evidence.

m. Having certification to practice emergency medical care suspended or revoked, or having other disciplinary action taken by a licensing or certifying authority of another state, territory or country. A certified copy of the record or order of suspension, revocation or disciplinary action is conclusive or prima facie evidence.

131.7(2) A basic emergency medical care provider who has knowledge of a basic or advanced emergency medical care provider or service program that has violated Iowa Code chapter 147A, Iowa Code section 147.161, Iowa Administrative Code 641--Chapter 132 or these rules, shall report such information to the department or board as appropriate.

131.7(3) A denial, probation, suspension or revocation ordered by the department shall be effected, and may be appealed according to the provisions set forth in rule 131.10 (147).

131.7(4) A determination of mental incompetence by a court of competent jurisdiction automatically suspends a certificate for the duration of the certificate unless the department orders otherwise.

641–131.8 (147) Denial, probation, suspension or revocation of training program or continuing education provider approval or renewal.

131.8(1) The department may deny an application for approval or renewal, or place on probation, suspend or revoke the approval or renewal when it finds that the applicant has failed to meet the applicable provisions of these rules or has committed any of the following acts or offenses:

a. Fraud in procuring approval or renewal.

b. Falsification of training or continuing education records.

c. Suspension or revocation of approval to provide advanced emergency medical care training or other disciplinary action taken pursuant to Iowa Code subsection 147A.4(2). A certified copy of the record or order of suspension, revocation or disciplinary action is conclusive or prima facie evidence.

131.8(2) A denial, probation, suspension or revocation ordered by the department shall be effected, and may be appealed according to the provisions set forth in rule 131.10 (147).

641–131.9 (147) Complaints and investigations.

131.9(1) All complaints regarding basic emergency medical care personnel, training programs or continuing education providers, or those purporting to be or operating as the same, shall be reported to the department. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075.

131.9(2) Complaints and investigations shall be treated as confidential in accordance with Iowa Code chapter 22.

131.9(3) Complaint investigations may result in the department's issuance of a notice of denial, probation, suspension or revocation.

641–131.10 (147) Appeal of denial, probation, suspension or revocation.

131.10(1) Denial, probation, suspension or revocation shall be effected in accordance with the requirements of Iowa Code section 17A.12. Notice to the alleged violator of denial, probation, suspension or revocation shall be served by restricted certified mail, return receipt requested, or by personal service.

131.10(2) Any request for appeal concerning denial, probation, suspension or revocation shall be submitted by the aggrieved party in writing to the department by certified mail, return receipt requested, within 30 days of the receipt of the department's notice. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075. If the request is made within the 30-day time period, the notice shall be deemed to be suspended. Prior to or at the hearing, the department may rescind the notice upon satisfaction that the reason for the denial, probation, suspension or revocation has been or will be removed. If no request for appeal is received within the 30-day time period, the department's notice of denial, probation, suspension or revocation shall become the department's final agency action.

131.10(3) Upon receipt of an appeal that meets contested case status, the appeal shall be forwarded within five working days to the department of inspections and appeals pursuant to the rules adopted by that agency regarding the transmission of contested cases. The information upon which the adverse action is based and any additional information which may be provided by the aggrieved party shall also be provided to the department of inspections and appeals.

131.10(4) The hearing shall be conducted according to the procedural rules of the department of inspections and appeals found in 481--Chapter 4, Iowa Administrative Code.

131.10(5) When the administrative law judge makes a proposed decision and order, it shall be served by restricted certified mail, return receipt requested, or delivered by personal service. That proposed decision and order then becomes the department's final agency action without further proceedings ten days after it is received by the aggrieved party unless an appeal to the director is taken as provided in subrule 131.10(6).

131.10(6) Any appeal to the director for review of the proposed decision and order of the administrative law judge shall be filed in writing and mailed to the director by certified mail, return receipt requested, or delivered by personal service within ten days after the receipt of the administrative law judge's proposed decision and order by the aggrieved party. A copy of the appeal shall also be mailed to the administrative law judge. Any request for an appeal shall state the reason for appeal.

131.10(7) Upon receipt of an appeal request, the administrative law judge shall prepare the record of the hearing for submission to the director. The record shall include the following:

a. All pleadings, motions, and rules.
b. All evidence received or considered and all other submissions by recording or transcript.
c. A statement of all matters officially noticed.
d. All questions and offers of proof, objections and rulings on them.
e. All proposed findings and exceptions.
f. The proposed decision and order of the administrative law judge.

131.10(8) The decision and order of the director becomes the department's final agency action upon receipt by the aggrieved party and shall be delivered by restricted certified mail, return receipt requested, or by personal service.

131.10(9) It is not necessary to file an application for a rehearing to exhaust administrative remedies when appealing to the director or the district court as provided in Iowa Code section 17A.19. The aggrieved party to the final agency action of the department who has exhausted all administrative remedies may petition for judicial review of that action pursuant to Iowa Code chapter 17A.

131.10(10) Any petition for judicial review of a decision and order shall be filed in the district court within 30 days after the decision and order becomes final. A copy of the notice of appeal shall be sent to the department by certified mail, return receipt requested, or by personal service. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075.

131.10(11) The party who appeals a final agency action to the district court shall pay the cost of the preparation of a transcript of the contested case hearing for the district court.

ADVANCED EMERGENCY MEDICAL CARE
(Iowa Administrative Code 641--Chapter 132)

The Iowa department of public health and the board of medical examiners jointly, pursuant to the authority of Iowa Code section 147A.4, adopt the following rules relating to the training and certification of and the services performed by advanced emergency medical care providers.

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641--132.1 (147A) Definitions. For the purpose of these rules, the following definitions shall apply:

"*ACLS*" or "*advanced cardiac life support*" means training and certification in advanced cardiac life support according to American Heart Association standards.

"*Advanced emergency medical care*" means such medical procedures as:

1. Administration of intravenous solutions.
2. Intubation.
3. Performance of cardiac defibrillation and synchronized cardioversion.
4. Administration of emergency drugs as provided by rule by the board.
5. Any other medical procedure approved by the board, by rule, as appropriate to be performed by advanced emergency medical care providers who have been trained in that procedure.

"*Advanced emergency medical care personnel*" or "*provider*" means any FR-D, EMT-D, EMT-I, or EMT-P currently certified by the board.

"*Advanced EMT*" means an EMT-D or EMT-I.

"*Air carrier*" or "*air taxi*" means any privately or publicly owned fixed-wing aircraft which may be specifically designed, modified, constructed, equipped, staffed and used regularly to transport the sick, injured or otherwise incapacitated who are in need of prehospital emergency medical care or whose condition requires treatment or continuous observation while being transported.

"*Ambulance*" means any privately or publicly owned rotorcraft or ground vehicle specifically designed, modified, constructed, equipped, staffed and used regularly to transport the sick, injured or otherwise incapacitated who are in need of prehospital emergency medical care or whose condition requires treatment or continuous observation while being transported.

"*Ambulance service*" means any privately or publicly owned service program which utilizes ambulances in order to provide patient transportation and emergency medical care at the scene of an emergency or while en route to a hospital. An ambulance service may use first response or rescue vehicles (nontransport) to supplement ambulance vehicles.

"*Automated defibrillator*" means any external automatic or semi-automatic device that recognizes the presence or absence of ventricular fibrillation and automatically determines whether defibrillation is required. Automated defibrillators must meet or exceed design and performance guidelines stipulated by the Association for the Advancement of Medical Instrumentation for automated external defibrillators, published in February 1986.

"*Board*" means the state board of medical examiners appointed pursuant to Iowa Code section 147.14, subsection 2.

"*CEHs*" means "continuing education hours" which are based upon a minimum of 50 minutes of training per hour.

"*Continuing education*" means training approved by the board which is obtained by a certified advanced emergency medical care provider to maintain, improve, or expand relevant skills and knowledge and to satisfy renewal of certification requirements.

"*Course completion date*" means the date of the final classroom session of an advanced emergency medical care provider course.

"*Course coordinator*" means an individual who has been assigned by the training program to coordinate the activities of an advanced emergency medical care provider course.

"*CPR*" means training and certification in cardiopulmonary resuscitation and obstructed airway procedures according to American Heart Association or American Red Cross standards. This includes one rescuer, two rescuer, and child/infant cardiopulmonary resuscitation and adult and child/infant obstructed airway procedures.

"*Department*" means the Iowa department of public health.

"*Emergency medical technician-ambulance*" means an individual who has successfully completed, as a minimum, the United States Department of Transportation's Emergency Medical Technician-Ambulance curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an EMT-A.

"*Emergency medical technician-defibrillation*" means an individual who has successfully completed an approved program which specifically addresses the recognition and manual or automated defibrillation of ventricular fibrillation, passed the board's approved written and practical examinations, and is currently certified by the board as an EMT-D.

"*Emergency medical technician-intermediate*" means an individual who has successfully completed the United States Department of Transportation's EMT-intermediate curriculum (excluding endotracheal intubation), passed the board's approved written and practical examinations, and is currently certified by the board as an EMT-I.

"*Emergency medical technician-paramedic*" means an individual who has successfully completed the United States Department of Transportation's EMT-paramedic curriculum, passed the board's approved written and practical examinations, and is currently certified by the board as an EMT-P.

"*EMS*" means emergency medical services.

"*EMS-I*" means emergency medical services-instructor.

"*EMS instructor*" means an individual who has successfully completed the United States Department of Transportation's EMS Instructor curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an EMS-I.

"*EMT-A*" means emergency medical technician-ambulance.

"*EMT-D*" means emergency medical technician-defibrillation.

"*EMT-I*" means emergency medical technician-intermediate.

"*EMT-P*" means emergency medical technician-paramedic.

"*First responder*" means an individual who has successfully completed the United States Department of Transportation's First Responder curriculum, passed the department's approved written and practical examinations, and is currently certified by the department as an FR.

"*First responder-defibrillation*" means an individual who has successfully completed an approved program which specifically addresses the automated defibrillation of ventricular fibrillation, passed the board's approved written and practical examinations, and is currently certified by the board as an FR-D.

"*First response vehicle*" means any privately or publicly owned vehicle which is used solely for the transportation of emergency medical care personnel and equipment to and from the scene of a medical or nonmedical emergency.

"*FR*" means first responder.

"*FR-D*" means first responder-defibrillation.

"*Hospital*" means any hospital licensed under the provisions of Iowa Code chapter 135B.

"*Intermediate*" means an emergency medical technician-intermediate.

"*Medical direction*" means direction, advice, or orders provided by a medical director, supervising physician, or physician designee (in accordance with written parameters and protocols) to advanced emergency medical care personnel.

"*Medical director*" means any physician licensed under Iowa Code chapter 148, 150, or 150A who shall be responsible for overall medical direction of the service program and is currently certified in ACLS.

"*Mutual aid*" means an agreement, preferably in writing, between two or more services that addresses how and under what circumstances each service will respond to a request for assistance.

"*Off-line medical direction*" means the monitoring of EMS providers through retroactive field assessments and treatment documentation review, critiques of selected cases with the EMS personnel, and statistical review of the system.

"*On-line medical direction*" means immediate medical advice via radio or phone communications between the EMS provider and the medical director, supervising physician or physician designee.

"*Outreach course coordinator*" means an individual who has been assigned by the training program to coordinate the activities of an advanced emergency medical care provider course held outside the training program facilities.

"*Paramedic*" means an emergency medical technician-paramedic.

"*Patient*" means any individual who is sick, injured, or otherwise incapacitated.

"*Physician*" means any individual licensed under Iowa Code chapter 148, 150, or 150A.

"*Physician designee*" means any registered nurse licensed under Iowa Code chapter 152, or any physician's assistant licensed under Iowa Code chapter 148C and approved by the board of physician's assistant examiners, who is currently certified in ACLS. The physician designee may act as an intermediary for a supervising physician in directing the actions of advanced emergency medical care personnel in accordance with written policies and protocols.

"*Preceptor*" means an individual who has been assigned by the training program, clinical facility or service program to supervise students while the students are completing their clinical or field experience. A preceptor must be an advanced emergency medical care provider certified at the level being supervised or higher, or must be licensed as a registered nurse, physician's assistant or physician.

"*Primary response vehicle*" means any ambulance, rescue vehicle or first response vehicle which is utilized by a service program and is normally dispatched as the initial vehicle to respond to an emergency call.

"*Rescue service*" means any privately or publicly owned service program which does not provide patient transportation and utilizes only rescue or first response vehicles to provide emergency medical care at the scene of an emergency.

"*Rescue vehicle*" means any privately or publicly owned vehicle which is specifically designed, modified, constructed, equipped, staffed and used regularly for rescue or extrication purposes at the scene of a medical or nonmedical emergency.

"*Rotorcraft ambulance*" means any privately or publicly owned rotorcraft specifically designed, modified, constructed, equipped, staffed and used regularly to transport the sick, injured or otherwise incapacitated who are in need of prehospital emergency medical care or whose condition requires treatment or continuous observation while being transported.

"*Secondary response vehicle*" means any ambulance, rescue vehicle or first response vehicle which is utilized by a service program when dispatched for routine or convalescent transfers, when the service program's primary response vehicle would have a longer response time, is already in service or is otherwise unavailable or when a mutual aid request requires a different type of response vehicle. Secondary response vehicles may be staffed and equipped at any level up to and including the service program's level of authorization.

"*Service program area*" means the geographic area of responsibility served by any given ambulance, rescue, or first response service program.

"*Service program*" or "*service*" means any 24-hour advanced emergency medical care ambulance service, rescue or first response service that has received authorization by the department.

"*Student*" means any individual enrolled in a training program and participating in the didactic, clinical, or field experience portions.

"*Supervising physician*" means any physician licensed under Iowa Code chapter 148, 150, or 150A who is currently certified in ACLS. The supervising physician is responsible for medical direction of advanced emergency medical care personnel when such personnel are providing advanced emergency medical care.

"*Training program*" means an area vocational school, an area community college or hospital approved by the board to conduct advanced emergency medical care training.

"*Training program director*" means an appropriate health care professional (full-time educator or practitioner of emergency or critical care) assigned by the training program to direct the operation of the training program.

"*Training program medical director*" means any physician licensed under Iowa Code chapter 148, 150, or 150A who is responsible for directing an advanced emergency medical care training program and is currently certified in ACLS.

641—132.2 (147A) Authority of advanced emergency medical care personnel.

132.2(1) Advanced emergency medical care personnel shall perform under the supervision of a physician in accordance with Iowa Code chapter 147A and these rules.

132.2(2) An advanced emergency medical care provider may:

a. Render advanced emergency medical care in those areas for which the advanced emergency medical care provider is certified, as part of an authorized advanced care service program:

(1) At the scene of an emergency;

(2) During transportation to a hospital;

(3) While in the hospital emergency department; and

(4) Until patient care is directly assumed by a physician or by authorized hospital personnel.

b. Function in any hospital when:

(1) Enrolled as a student or participating as a preceptor in a training program approved by the board;

(2) Fulfilling continuing education requirements;

(3) Employed by or assigned to a hospital as a member of an authorized advanced care service program, by rendering lifesaving services in the facility in which employed or assigned pursuant to the advanced emergency medical care provider's certification and under direct supervision of a physician or registered nurse. An advanced emergency medical care provider shall not routinely function without the direct supervision of a physician or registered nurse. However, when the physician or registered nurse cannot directly assume emergency care of the patient, the advanced emergency medical care personnel may perform, without direct supervision, emergency medical care procedures for which certified, if the life of the patient is in immediate danger and such care is required to preserve the patient's life;

(4) Employed by or assigned to a hospital as a member of an authorized advanced care service program to perform nonlifesaving procedures for which trained and designated in a written job description. Such procedures may be performed after the patient is observed by and when the advanced emergency medical care provider is under the supervision of the physician or registered nurse and where the procedure may be immediately abandoned without risk to the patient.

132.2(3) When advanced emergency medical care personnel are functioning in a capacity identified in subrule 132.2(2), paragraph "a," they may perform advanced emergency medical care in life-threatening situations or in cases of communication failure without contacting a supervising physician or physician designee if written protocols have been approved by the service program medical director which clearly identify when the protocols may be used in lieu of voice contact.

132.2(4) Advanced emergency medical care skills which may be performed if approved by the service program's medical director include:

a. At the FR-D level:

automated defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision-making by the FR-D).

b. At the EMT-D level:

defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision-making by the EMT-D).

c. At the EMT-I level:

(1) Initiation, maintenance and monitoring of nonmedicated intravenous solutions (using the peripheral venous system including the external jugular vein).

(2) Esophageal intubation.

(3) Endotracheal intubation when using a blindly inserted, combined esophageal/endotracheal device.

(4) Gastric tube insertion.

(5) Defibrillation and external cardiac pacing (provided the pacing is part of an automated defibrillator device and requires no decision making by the EMT-I).

d. At the EMT-P level:

(1) Defibrillation, cardioversion and external cardiac pacing.

(2) Endotracheal and esophageal intubation and suctioning.

(3) Initiation, maintenance and monitoring of nonmedicated and medicated intravenous solutions (using the peripheral venous system, including the external jugular vein).

(4) Maintenance and monitoring of intravenous infusion of blood and blood products.

(5) Administration of oral, intravenous, inhaled, intramuscular, subcutaneous and topical medications approved by the medical director.

(6) Direct laryngoscopy.

(7) Gastric tube insertion.

(8) Nasogastric tube insertion.

(9) Rotating tourniquets.

(10) Urinary catheterization.

(11) Cricothyrotomy and transtracheal jet insufflation.

(12) Tension pneumothorax decompression.

132.2(5) The board may approve other advanced emergency medical care skills on a limited pilot project basis. Requests for pilot projects shall be submitted in writing to the executive director of the board at least 30 days prior to the board meeting.

132.2(6) An advanced emergency medical care provider who has knowledge of a basic or advanced emergency medical care provider or service program that has violated Iowa Code chapter 147A or these rules shall report such information to the board or the department, as appropriate.

641—132.3 (147A) Advanced emergency medical care providers – requirements for enrollment in training programs.

132.3(1) To be enrolled in a training program, an applicant shall:

a. Be at least 18 years of age at the time of enrollment.

b. Have a high school diploma or its equivalent.

c. Be able to speak, write and read English.

d. Be physically able to perform the functions of an advanced emergency medical care provider as appropriate.

e. Be currently certified in CPR.

f. Be currently certified as an FR, if enrolling in an FR-D course.

g. Be current certified as an EMT-A, if enrolling in an advanced EMT or paramedic course.

132.3(2) With training program approval, persons who are not enrolled in an advanced emergency medical care provider course may audit those courses. They shall not be eligible to take the practical and written certification examinations.

641—132.4 (147A) Advanced emergency medical care providers – certification, renewal standards and procedures, and fees.

132.4(1) Application and examination.

a. Applicants shall complete an "EMS Student Registration" form at the beginning of the course. Courses which are completed within two weeks are exempt from this requirement. "EMS Student Registration" forms are provided by the board.

b. "EMS Student Registration" forms shall be forwarded to the board by the training program no later than two weeks after the beginning of the course.

c. Upon satisfactory completion of the course and all training program requirements, the student shall be recommended by the training program to take the certification examinations.

d. The practical examination shall be administered by the training program using the standards and forms provided by the board. The training program shall notify the board at least two weeks prior to the administration of a practical examination.

e. To be eligible to take the written examination, the student shall first pass the practical examination.

f. The student shall submit an "EMS Certification Application" form. "EMS Certification Application" forms are provided by the board.

g. When a student's "EMS Student Registration" or "EMS Certification Application" is referred to the board for investigation, the student shall not be certified until approved by the board.

h. The EMT-I and EMT-P written examinations shall be administered by the board at times and places scheduled by the board. FR-D and EMT-D written examinations shall be administered by the training program. The FR-D and EMT-D written examination fee shall be determined by the training program.

i. No oral certification examinations shall be permitted.

j. Practical examination fees shall be determined by the training program.

k. The fee for grading and processing each EMT-I and EMT-P written examination is $20 payable to the Iowa Board of Medical Examiners.

l. A student who fails the practical certification examination shall be required to repeat only those stations which were failed and shall have two additional opportunities to attain a passing score. The student may repeat the failed examination stations on the same day as determined by the training program.

m. A student who fails to attain at least a 75 percent overall score on the written certification examination shall have two additional opportunities to complete the entire examination and attain a passing score.

n. A student who fails to pass the practical or written certification examination on the third attempt and who wishes to pursue certification shall repeat the entire course.

o. All examination attempts shall be completed within one year of the initial course completion date.

p. Examination scores shall be confidential except that they may be released to the training program which provided the training or released in a manner which does not permit the identification of an individual.

132.4(2) Multiple certificates and renewal.

a. Only one certificate issued by the board shall be considered active. That certificate shall be for the individual's highest level of certification. Any lower levels of certification shall be considered inactive.

b. A lower level certificate may be issued if the individual fails to renew the higher level of certification or voluntarily chooses to move from a higher level to a lower level. To be issued a certificate in these instances, an individual shall:

(1) Complete all applicable continuing education requirements for the lower level during the certification period.

(2) Complete and submit to the board an "Application for Renewal of Certification" and the applicable fee.

c. A denial, probation, suspension or revocation imposed upon an individual certificate holder by the board shall be considered applicable to all certificates issued to that individual by the board.

132.4(3) Renewal of certification.

a. A certificate shall be valid for two years from issuance unless specified otherwise on the certificate or unless sooner suspended or revoked.

b. All continuing education requirements shall be completed during the certification period prior to the certificate's expiration date. Failure to complete the continuing education requirements prior to the expiration date shall result in lapsed certification.

c. No more than 90 days after the expiration date shall be allowed for the submission (based upon the postmark date) of the "Application for Renewal of Certification" booklet to document completion of continuing education requirements. After 90 days, the certification shall be considered lapsed and the individual shall not function as an advanced emergency medical care provider.

An individual who completes the required continuing education during the certification period, but fails to submit the "Application for Renewal of Certification" within 90 days after the expiration date, shall be required to submit a late fee of $30 (in addition to the renewal fee) to obtain renewal of certification.

d. An individual who has not completed the required continuing education during the certification period and is seeking to reinstate a lapsed certificate shall:

(1) Complete continuing education courses equivalent to the renewal requirements for that particular level of certification within six years following the certificate's expiration date. Refer to Table 1 for total number of hours required.

(2) Meet all applicable eligibility requirements.

(3) Submit an "EMS Reinstatement Application" and the applicable fees to the board.

(4) Pass the appropriate practical and written certification examinations.

TABLE 1

	REQUIRED CONTINUING EDUCATION HOURS FOR REINSTATEMENT (Including required topics)			
CERTIFICATION LAPSED FOR	**FR-D**	**EMT-D**	**EMT-I**	**EMT-P**
Less than 2 years	14	24	48	60
2 - 4 years	28	48	96	120
4 - 6 years	42	72	144	180

e. If certification has been expired for more than six years, the individual shall repeat the entire course, pass the practical and written certification examinations, meet all applicable eligibility requirements and submit the applicable fees and forms to again become certified.

f. If an individual is unable to complete the required continuing education during the certification period due to an illness or injury, a one-year extension of certification may be issued upon submission of a signed statement from a physician and approval by the board.

132.4(4) Renewal standards. The "Application for Renewal of Certification" and instructions for renewal shall be mailed with the certificate to the certificate holder. To be eligible for renewal, the certificate holder shall:

a. Have signed and submitted an "Application for Renewal of Certification" and the applicable fee within 90 days after the certificate's expiration date.

b. Have a current CPR certificate or a signed and dated statement from a certified CPR instructor that documents current certification in CPR. Paramedics shall also have a current ACLS certification or a signed and dated statement from a certified ACLS instructor that documents current certification in ACLS.

c. Have completed the continuing education requirements during the certification period including:

(1) FR-D - 14 hours of approved continuing education including at least one hour in each of the required topic areas listed in subparagraph (5).

(2) EMT-D - 24 hours of approved continuing education including at least one hour in each of the required topic areas listed in subparagraph (5).

(3) EMT-I - 48 hours of approved continuing education including at least one hour in each of the required topic areas listed in subparagraph (5).

(4) EMT-P - 60 hours of approved continuing education including at least one hour in each of the required topic areas listed in subparagraph (5).

(5) Required topics for all levels include the following:

Infectious diseases
Abuse (child and dependent adult)
Trauma emergencies (should include skills practice)
Medical emergencies (should include skills practice)

132.4(5) Continuing education approval. Continuing education hours (CEHs) may be issued for the following types of training during the certification period:

a. Courses which are based upon the board's or the department's curricula for EMS providers and other courses pertinent to emergency medical care. Approved self-study and video courses are permitted (4 hours maximum for FR-D; 8 hours maximum for EMT-D, 16 hours maximum for EMT-I; 20 hours maximum for EMT-P).

b. In-hospital clinical experience in areas relating to emergency medical care (4 hours maximum for FR-D; 8 hours maximum for EMT-D; 16 hours maximum for EMT-I; 20 hours maximum for EMT-P).

c. Disaster drills (4 hours maximum).

d. Continuing education course instructors will be granted the appropriate number of CEHs for the courses taught.

e. EMS course instructors will be granted the appropriate number of CEHs for the courses taught. When identical courses are taught, CEHs will be granted for the first course only.

f. Practical certification examination evaluation (6 hours maximum).

g. EMS course attendance (or audit) will qualify as continuing education based upon the number of hours attended (or audited).

h. ACLS training (6 hours maximum).

i. Basic care continuing education hours which have been approved pursuant to Iowa Administrative Code 641--131.7(147) shall be considered approved for advanced emergency medical care personnel.

132.4(6) Out-of-state continuing education. Out-of-state continuing education courses will be accepted for CEHs if they meet the criteria in subrule 132.4(5) and have been approved for emergency medical care personnel in the state in which the courses were held. A copy of course completion certificates (or other verifying documentation) shall be submitted to the board with the "Application for Renewal of Certification."

132.4(7) CEHs shall not be approved for:

a. CPR course attendance, CPR course instruction or CPR instructor training.

b. Courses or portions of courses which are beyond the scope of training and authority for emergency medical care personnel.

132.4(8) Certification and renewal fees.

a. The following fees shall be collected by the board:

(1) EMT-I and EMT-P written examination/certification fee - $20.
(2) FR-D and EMT-D certification fee - $10.
(3) Renewal of certification(s) fee - $10.
(4) Endorsement certification fee - $30.
(5) Reinstatement fee - $30.
(6) Late fee - $30.

132.4(9) Certification through endorsement. An individual currently certified by another state or by the National Registry of EMTs shall also possess a current Iowa certificate to be considered certified in this state. The board shall contact the state of certification or the National Registry of EMTs to verify certification and good standing. To receive Iowa certification, the individual shall:

a. Complete and submit the "EMS Endorsement Application" available from the board.

b. Provide verification of current certification in another state or with the National Registry of EMTs.

c. Provide verification of current certification in CPR. Applicants for paramedic endorsement shall also provide verification of certification in ACLS.

d. Pass the appropriate Iowa practical and written certification examinations in accordance with subrule 132.4(1).

e. Meet all other applicable eligibility requirements necessary for Iowa certification pursuant to these rules.

f. Submit all applicable fees to the board.

g An individual certified through endorsement shall satisfy the renewal and continuing education requirements set forth in subrule 132.4(4) to renew Iowa certification.

641—132.5 (147) Training programs – standards, application, inspection and approval.

132.5(1) Curricula.

a. The training program shall use, as a minimum, the course curricula approved by the board and shall include, as a minimum, the following course components:

(1) Defibrillation course:
  1. Four hours of classroom instruction for automated defibrillators.
  2. Sixteen hours of classroom instruction for manual defibrillators.
  3. Clinical experience as may be required by the training program.
  4. Ambulance field experience as may be required by the training program.

(2) Emergency medical technician - intermediate (EMT-I) course:
  1. Sixty hours of classroom instruction.
  2. Fifty hours of clinical experience.
  3.) Fifty hours of ambulance/rescue field experience.

(3) Emergency medical technician-paramedic (EMT-P) course:
  1. Three hundred hours of classroom instruction.
  2. One hundred fifty hours of clinical experience.
  3. One hundred fifty hours of ambulance/rescue field experience.

b. The training program may waive portions of the required training by documenting equivalent training and what portions of the course have been waived for equivalency.

132.5(2) Cardiac arrest tape review. Advanced care training programs may apply to the board for approval to provide cardiac arrest tape review if:

a. A written agreement between the service program medical director and the training program exists to ensure responsibility for the review of cardiac arrest tapes and the maintenance of statistical information; and

b. The training program has the necessary equipment and staff available to perform cardiac arrest tape review and to report statistical information; and

c. The training program provides a written review of the cardiac arrest tape to the service program, the service program medical director and the department; and

d. The training program submits to the department on a monthly basis a standardized data collection sheet for each cardiac arrest tape review. The standardized data collection sheets are available upon request from: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075.

132.5(3) Clinical or field experience resources. If clinical or field experience resources are located outside the framework of the training program, written agreements for such resources shall be obtained by the training program.

132.5(4) Facilities.

a. There shall be adequate classroom, laboratory, and practice space to conduct the training program. A library with reference materials on emergency and critical care shall also be available.

b. Opportunities for the student to accomplish the appropriate advanced skill competencies in the clinical environment shall be ensured. The following hospital units should be available for clinical experience for each training program as required in subrule 132.5(1):

(1) Emergency department;
(2) Intensive care unit or coronary care unit or both;
(3) Operating room and recovery room;
(4) Intravenous or phlebotomy team, or other method to obtain IV experience;
(5) Pediatric unit;
(6) Labor and delivery suite, and newborn nursery; and
(7) Psychiatric unit.

c. Opportunities for the student to accomplish the appropriate advanced skill competencies in the field environment shall be ensured. The training program shall use an advanced emergency medical care service program to provide field experience as required in subrule 132.5(1).

d. The training program shall have liability insurance and shall offer liability insurance to students while enrolled in a training program.

132.5(5) Staff.

a. The training program medical director shall be a physician who is currently certified in ACLS.

b. A training program director shall be appointed who is an appropriate health care professional. This individual shall be a full-time educator or a practitioner in emergency or critical care. Current EMS instructor certification is also recommended, but not mandatory.

c. Effective January 1, 1992, the course coordinators and the outreach course coordinators used by the training program shall be currently certified as EMS instructors.

d. The instructional staff shall be comprised of physicians, nurses, pharmacists, advanced emergency medical care personnel, or other health care professionals who have appropriate education and experience in emergency and critical care. Current EMS instructor certification is also recommended, but not mandatory.

e. Preceptors shall be assigned in each of the clinical units in which advanced emergency medical care students are obtaining clinical experience and field experience. The preceptors shall supervise student activities to ensure the quality and relevance of the experience. Student activity records shall be kept and reviewed by the immediate supervisor(s) and by the program director and course coordinator.

f. If a training program's medical director resigns, the training program director shall report this to the board and provide a curriculum vitae for the medical director's replacement. A new course shall not be started until a qualified medical director has been appointed.

g. The training program shall maintain records for each instructor used which include, as a minimum, the instructor's qualifications.

h. The training program is responsible for ensuring that each course instructor is experienced in the area being taught and adheres to the course curricula.

i. The training program shall ensure that each practical examination evaluator and mock patient is familiar with the practical examination requirements and procedures.

132.5(6) Advisory committee. There shall be an advisory committee which includes training program representatives and other groups such as affiliated medical facilities, local medical establishments, and ambulance, rescue and first response service programs.

132.5(7) Student records. The training program shall maintain an individual record for each student. Training program policy and board requirements will determine contents. These requirements may include:

a. Application;

b. Current certifications;

c. Student record or transcript of hours and performance (including examinations) in classroom, clinical, and field experience settings.

132.5(8) Selection of students. There may be a selection committee to select students using, as a minimum, the prerequisites outlined in subrule 132.3(1).

132.5(9) Students.

a. Students may perform any procedures and skills that certified advanced emergency medical care personnel may perform, if they are under the direct supervision of a physician or physician designee, or under the remote supervision of a physician or physician designee, with direct field supervision by an appropriately certified advanced emergency medical care provider.

b. Students shall not be substituted for personnel of any affiliated medical facility or service program, but may be employed while enrolled in the training program.

132.5(10) Financing and administration.

a. There shall be sufficient funding available to the training program to ensure that each class started can be completed.

b. Tuition charged to students shall be accurately stated.

c. Advertising for training programs shall be appropriate.

d. The training program shall provide to each student, within two weeks of the course starting date, a guide which outlines as a minimum:

(1) Course objectives.
(2) Minimum acceptable scores on interim testing.
(3) Attendance requirements.
(4) Disciplinary actions that may be invoked and the reasons for them.

132.5(11) Training program application, inspection and approval.

a. An applicant seeking initial or renewal training program approval shall use the "EMS Training Program Application" provided by the board. The application shall be submitted at least two months prior to a regular board meeting for board action. The application shall include, as a minimum:

(1) Appropriate officials of the applicant;
(2) Evidence of availability of clinical resources;
(3) Evidence of availability of physical facilities;
(4) Evidence of qualified faculty;
(5) Qualifications and major responsibilities of each faculty member;
(6) Policies used for selection, promotion, and graduation of trainees; and
(7) Practices followed in safeguarding the health and well-being of trainees, and patients receiving emergency medical care within the scope of the training program.

b. New training programs shall submit a needs assessment which justifies the need for the training program.

c. Applications shall be reviewed in accordance with the current "Essentials and Guidelines of an Accredited Educational Program for the Emergency Medical Technician-Paramedic," published by the American Medical Association.

d. An on-site inspection of the applicant's facilities and clinical resources will be performed. The purpose of the inspection is to examine educational objectives, patient care practices, facilities and administrative practices, and to prepare a written report for review and action by the board.

e. No person shall interfere with the inspection activities of the board or its agents. Interference with or failure to allow an inspection may be cause for disciplinary action regarding training program approval.

f. Representatives of the applicant may be required by the board to meet with the board at the time the application and inspection report are discussed.

g. A written report of board action accompanied by the board inspection reports shall be sent to the applicant.

h. Training program approval shall not exceed two years.

i. The training program shall notify the board, in writing, of any change in ownership or control within 30 days.

641—132.6 (147A) Continuing education providers – approval, record keeping and inspection.

132.6(1) Continuing education courses for advanced emergency medical care personnel may be approved by the board, the department or a training program.

132.6(2) A training program may conduct continuing education courses (utilizing appropriate instructors) which are within the scope of training and authority for emergency medical care personnel.

a. Each training program shall assign a sponsor number to each continuing education course using an assignment system approved by the board.

b. Each training program shall maintain a student record that includes, as a minimum:

Name
Address
Certification number
Social security number

c. Each training program shall submit to the board the "Approved EMS Continuing Education" form on a quarterly basis.

132.6(3) Record keeping and record inspection.

a. The board may request additional information or inspect the records of any continuing education provider currently approved or who is seeking approval to ensure compliance or to verify the validity of any training program application.

b. No person shall interfere with the inspection activities of the board or its agents. Interference with or failure to allow an inspection may be cause for disciplinary action regarding training program approval.

641–132.7 (147A) Service program–authorization and renewal procedures, inspections and transfer or assignment of certificates of authorization.

132.7(1) General requirements for authorization and renewal of authorization.

a. An ambulance, rescue or first response service in this state that desires to provide advanced emergency medical care, in the prehospital setting shall apply to the department for authorization to establish a program utilizing certified advanced emergency medical care providers for delivery of the care at the scene of an emergency, during transportation to a hospital, or while in the hospital emergency department and until care is directly assumed by a physician or by authorized hospital personnel. Application for authorization shall be made on forms provided by the department. Applicants shall complete and submit the forms to the department at least 30 days prior to the anticipated date of authorization.

b. To renew service program authorization, the service program shall continue to meet the requirements of Iowa Code chapter 147A and these rules. The renewal application shall be completed and submitted to the department at least thirty days before the current authorization expires.

c. Applications for authorization and renewal of authorization may be obtained upon request to: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075.

d. The department shall approve an application when the department is satisfied that the program proposed by the application will be operated in compliance with Iowa Code chapter 147A and these administrative rules.

e. Service program authorization is valid for a period of two years from its effective date unless otherwise specified on the certificate of authorization or unless sooner suspended or revoked.

f. Service programs shall be fully operational upon the effective date and at the level specified on their certificate of authorization and shall meet all applicable requirements of Iowa Code chapter 147A and these rules.

g. The certificate of authorization shall be issued only to the service program based in the city named in the application and shall not be inclusive of any other base of operation when that base of operation is located in a different city. Any ambulance service or rescue squad service that is based in and operates from more than one city shall apply for and, if approved, shall receive a separate authorization for each base of operation that desires to provide advanced emergency medical care.

h. Any service program owner in possession of a certificate of authorization as a result of transfer or assignment shall continue to meet all applicable requirements of Iowa Code chapter 147A and these rules. In addition, the new owner shall apply to the department for a new certificate of authorization within thirty (30) days following the effective date of the transfer or assignment.

132.7(2) Out-of-state service programs.

a. Service programs located in other states which wish to provide advanced emergency medical care in Iowa must meet all requirements of Iowa Code chapter 147A and these rules and must be authorized by the department except when:

(1) Transporting patients from locations within Iowa to destinations outside of Iowa;
(2) Transporting patients from locations outside of Iowa to destinations within Iowa;
(3) Transporting patients to or from locations outside of Iowa that requires travel through Iowa; or
(4) Responding to a request for mutual aid in this state.

b. Reserved.

132.7(3) Rotorcraft ambulances and air taxis or air carriers.

a. Rotorcraft ambulances shall meet all applicable requirements of Iowa Code chapter 147A and these rules except for subrule 132.7(2), paragraphs 132.8(1)"b" and "c," and subrules 132.8(8) and 132.8(9).

b. Air taxis or air carriers shall not be subject to the requirements of Iowa Code chapter 147A and these rules except when utilizing advanced EMTs or paramedics to provide advanced emergency medical care. In such instances, advanced EMTs or paramedics shall be members of an authorized service program (assigned by that service program) and shall be provided with the appropriate equipment and medical direction deemed necessary by that service program's medical director.

132.7(4) Service program inspections.

a. The department shall inspect each service program at least once every two years. The department without prior notification may make additional inspections at times, places and under such circumstances as it deems necessary to ensure compliance with Iowa Code chapter 147A and these rules.

b. The department may request additional information from or may inspect the records of any service program which is currently authorized or which is seeking authorization to insure continued compliance or to verify the validity of any information presented on the application for service program authorization.

c. The department may inspect the patient care records of a service program to verify compliance with Iowa Code chapter 147A and these rules.

d. No person shall interfere with the inspection activities of the department or its agents pursuant to Iowa Code section 135.36.

e. Interference with or failure to allow an inspection by the department or its agents may be cause for disciplinary action in reference to service program authorization.

132.7(5) Temporary service program authorization.

a. A temporary service program authorization may be issued to services that wish to operate during special events that may need advanced emergency medical care coverage. Temporary authorization is valid for a period of 30 days unless otherwise specified on the certificate of authorization or unless sooner suspended or revoked. Temporary authorization shall apply to those requirements and standards for which the department is responsible. Applicants shall complete and submit the necessary forms to the department at least 30 days prior to the anticipated date of need.

b. The service shall meet applicable requirements of these rules, but may apply for a variance using the criteria outlined in rule 132.14(147A).

c. The service shall submit a justification which demonstrates the need for the temporary service program authorization.

d. The service shall submit a report within 30 days after the expiration of the temporary authorization which includes as a minimum:

(1) Number of patients treated;
(2) Types of treatment rendered;
(3) Any operational or medical problems.

132.7(6) Conditional service program authorization. Any service that is unable to meet the 24-hour-per-day staffing requirement to receive full authorization at the advanced emergency medical care provider level that wishes to provide advanced care on an intermittent basis, shall apply to the department. The service shall:

a. Justify why the service is unable to meet the staffing requirements of subrule 132.8(1), paragraphs "a" and "b."

b. Provide a description of how the service intends to inform the service program area of the service's conditional status. Such methods would include periodic newspaper publications, or other reasonable means of notification.

c. If approved, receive a conditional certificate of authorization from the department, but shall not advertise or otherwise imply or hold itself out to the public as a fully authorized service program.

d. If approved, utilize advanced emergency medical care providers as appropriate to their level of certification up to and including the level of conditional authorization.

e. Meet all applicable requirements of these rules with the exception of subrule 132.8(1), paragraphs "a" and "b."

f If an ambulance service, provide as a minimum, one EMT-A and one FR on each primary response vehicle call. The FR shall be the driver unless a third person is present to act as the driver. The service shall document each driver's training in emergency driving techniques and in the use of the service's communications equipment.

g. If a rescue or first response service, have a written mutual aid agreement with at least one ground ambulance service to ensure coverage when no certified personnel are available.

641—132.8 (147A) Service program—operational requirements, recordkeeping, equipment and supply standards.

132.8(1) Service programs shall:

a. Maintain an adequate number of primary response vehicles and personnel to provide twenty-four hour per day, seven day per week service at their authorized level. The adequate number of primary response vehicles and personnel to be maintained shall be determined by the department and shall be based upon, but not limited to, the following:

(1) Number of calls;
(2) Service area and population; and
(3) Availability of other services in the area.

b. Provide on each primary response vehicle call, as appropriate to the service program's level of authorization, the following:

(1) Ground ambulance services shall provide, as a minimum, one advanced EMT or paramedic and one EMT-A. The service shall document each driver's training in emergency driving techniques and in the use of the service's communications equipment.

(2) Rescue and first response service programs shall provide, as a minimum, one advanced emergency medical care provider.

c. Ensure that personnel duties are consistent with their level of certification and the service program's level of authorization.

d. Maintain current personnel rosters and personnel files. The files shall include the names and addresses of all personnel and documentation that verifies current personnel qualifications.

e. On a yearly basis, unless sooner requested by the department, notify the department in writing of any changes in their personnel rosters.

f. Have a medical director and on-line medical direction available on a twenty-four hour per day, seven day per week basis.

g. Utilize a dispatching and scheduling system which ensures that the appropriate service program personnel respond as required in this rule, and that they respond in a reasonable amount of time.

h. Notify the department in writing within seven days of any change in ownership or control or of any reduction or discontinuance of operations.

i. Select a new or temporary medical director if for any reason the incumbent medical director cannot or no longer wishes to serve in that capacity. Selection shall be made before the incumbent relinquishes the duties and responsibilities of that position.

j. Within seven days of any change in medical directors, notify the department in writing of the selection of the new or temporary medical director who must have indicated in writing a willingness to serve in that capacity.

k. On a yearly basis, unless sooner requested by the department, notify the department in writing of any changes in the supervising physicians or physician designees providing medical direction.

l. Secondary response vehicles are not required to meet the vehicle standards, staffing and equipment requirements of primary response vehicles. When advanced emergency medical care is to be provided, however, appropriate staff, equipment and supplies shall also be provided to ensure continuity of care. If an advanced emergency medical care provider is not available to staff and to provide advanced emergency medical care on a secondary response vehicle, a registered nurse, physician or physician's assistant may provide that care pursuant to their license.

m. Nothing in these rules shall prevent a registered nurse, physician or physician's assistant from supplementing the staff of a primary or secondary response vehicle.

n. Nothing in these rules shall prevent an authorized ambulance service program from utilizing a rescue or first response vehicle as a secondary response vehicle.

o. The service program shall maintain a skills maintenance log (or a similar form or system containing comparable data) available upon request from: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075. The medical director shall designate, in writing, the minimum number and type of monthly or quarterly mandatory skills to be performed. However, as a minimum, individuals who are certified as a FR-D, EMT-D or EMT-I shall complete defibrillation practice sessions (monthly for individuals who utilize manual defibrillators and quarterly for individuals who utilize automated defibrillators).

p. Effective January 1, 1990, no initial authorization shall be issued to EMT-D or EMT-I services wishing to utilize a manual defibrillator. This provision does not apply to EMT-D or EMT-I services authorized prior to January 1, 1990.

132.8(2) Each service program shall complete and maintain accurate records concerning the emergency care provided to each patient. An oral or written report should be given to the receiving hospital to ensure continuity of patient care. The "Iowa Prehospital Care Report" and the "Iowa Prehospital Advanced Care Report" (or a similar report utilized by a service program containing comparable data) shall be maintained. The data entered thereon shall be provided, upon request of the department, to the department for statistical and other study purposes, or for verification of compliance with Iowa Code chapter 147A and these rules.

a. Service programs shall complete and submit to the department on a quarterly basis, a special patient care report for each call where cardiopulmonary resuscitation is performed. The report is available upon request to:

Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319-0075.

b. In addition, FR-D, EMT-D and EMT-I service programs shall:

(1) Use the defibrillation protocol approved by the department.

(2) Make simultaneous voice/ECG recordings on each call where cardiopulmonary resuscitation is performed. These recordings shall commence upon arrival at the patient's side and shall not be terminated until patient care is assumed by higher level personnel with appropriate training and equipment.

(3) Submit a copy of the patient care report and the original voice/ECG recording to the approved training program designated by the medical director within 48 hours of the cardiac arrest.

132.8(3) The "Iowa Prehospital Care Report" and the "Iowa Prehospital Advanced Care Report" (or any similar report utilized by a service program containing comparable data) is a confidential document and shall be exempt from disclosure pursuant to Iowa Code subsection 22.7(2) and shall not be accessible to the general public. Information contained in those reports, however, may be utilized by any of the indicated distribution recipients and may appear in any document or public health record in a manner which prevents the identification of any patient or person named in those reports.

132.8(4) Required equipment and vehicle standards.

a. Ground ambulance service programs shall, as a minimum, use primary response vehicles that meet the Iowa ambulance standards listed in subrule 132.8(8). These vehicles shall be equipped, as a minimum, with the Iowa essential equipment for primary response vehicles listed in subrule 132.8(10).

b. Rotorcraft ambulances shall be equipped, as a minimum, with the Iowa essential equipment for primary response vehicles (excluding lower extremity traction splints and long spine boards) listed in subrule 132.8(10).

c. Rescue service programs shall, as a minimum, use primary response vehicles that meet the Iowa rescue and first response vehicle standards listed in subrule 132.8(9). When primary response vehicles are utilized in first response service programs, they shall, as a minimum, meet the Iowa rescue and first response vehicle standards listed in subrule 132.8(9).

d. Rescue and first response service programs shall be equipped, as a minimum, with the following equipment:

(1) Bite stick.
(2) Pocket mask or equivalent.
(3) Large and small sterile dressings.
(4) Soft roller bandages.
(5) Tape of various sizes.
(6) Clean burn sheets (need not be sterile).
(7) Occlusive dressing (occlusive gauze, plastic wrap, or defibrillator pads).
(8) Extremity immobilizing device (board, ladder or formable splint).
(9) Triangular bandages or slings.
(10) Shears and scissors.
(11) Sterile obstetrical kit.
(12) Aluminum foil or silver swaddler (or equivalent) to maintain infant body temperature.
(13) Penlight or equivalent and flashlight.

e. Primary and secondary response vehicles shall be maintained in a safe operating condition or shall be removed from service.

f. FR-D service programs shall have, as a minimum, one automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder.

g. Primary response vehicles used in EMT-D service programs shall have, as a minimum, one manual or automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder.

h. Primary response vehicles used in EMT-I service programs shall have, as a minimum, one manual or automated, portable, battery-operated defibrillator equipped with a voice/ECG recorder. Primary response vehicles shall also have, as a minimum, the following additional equipment and supplies in quantities determined by the medical director.

(1) Required supplies:
  1. Alcohol or betadine wipe
  2. Intravenous fluids
    Lactated ringers
    5 percent Dextrose in water

3. Macro-drip administration set
4. Micro-drip administration set
5. Tourniquet
6. 16 gauge IV needle
7. 18 gauge IV needle
8. 20 gauge IV needle
9. Tape of various sizes
10. Esophageal airway

(2) Optional supplies:

1. 18 gauge needle
2. 25 gauge needle
3. 6 ml syringe
4. 12 ml syringe
5. 14 gauge IV needle
6. 22 gauge IV needle
7. Butterfly IV needle
8. Various size needles
9. Bacteriostatic water
10. IV extension tubing
11. Normal saline IV fluid
12. Antibiotic ointment
13. Vacuum tube

i. Primary response vehicles used in EMT-P service programs shall have, as a minimum, one manual or automated, portable, battery-operated defibrillator. Primary response vehicles shall also have, as a minimum, the EMT-I required supplies listed in subrule 132.8(4), paragraph "h," and the following additional equipment and supplies in quantities determined by the medical director.

(1) Required supplies:

1. Endotracheal airways
2. Laryngoscope

(2) Required drugs:

1. Atropine sulfate
2. Bretylium tosylate
3. Dextrose 50 percent injectable
4. Diazepam
5. Dopamine HCl
6. Epinephrine HCl (1:10,000)
7. Epinephrine HCl (1:1,000)
8. Glucose paste
9. Isoproterenol HCl
10. Lidocaine HCl (for bolus and infusion)
11. Morphine sulfate
12. Naloxone
13. Nitroglycerin tablets
14. Sodium bicarbonate
15. Syrup of ipecac

(3) Optional drugs:

1. Aminophylline
2. Activated charcoal
3. Calcium chloride/gluconate
4. Decadron
5. Dobutamine
6. Furosemide
7. Glucagon
8. Mannitol
9. Meperidine

10. Nitroglycerin paste
11. Nitrous oxide
12. Oxytocin
13. Procainamide HCl
14. Propranolol HCl
15. Syrup of Ipecac
16. Thiamine
17. Verapamil

NOTE: Other drugs may be administered upon completion of training and establishment of a written protocol approved by the medical director.

j. Over-the-counter drugs may be administered by EMT-D, EMT-I or EMT-P service programs upon completion of training and establishment of a written protocol approved by the medical director.

k. All drugs shall be maintained in accordance with the rules of the state board of pharmacy examiners. The rules are available upon request to: Iowa State Board of Pharmacy Examiners, Executive Hills West, Des Moines, Iowa 50319.

l. Accountability for drug exchange, distribution, storage, ownership, and security shall be subject to applicable state and federal requirements. The method of accountability shall be described in the written pharmacy agreement. A copy of the written pharmacy agreement shall be submitted to the department.

m. Ambulance service programs shall maintain a telecommunications system between the advanced emergency medical care provider and the source of their medical direction and other appropriate entities. First response and rescue service programs shall maintain a telecommunications system between the advanced emergency medical care provider and the responding ambulance service and other appropriate entities.

n. All communications equipment shall be capable of transmitting and receiving clear and understandable voice communications to and from the service program's communications base and all points within the service program's primary service area.

o. All communications shall be conducted in an appropriate manner and on a frequency approved by the federal communications commission, the state division of communications, and the department.

132.8(5) Each service program shall establish periodic maintenance and checklist procedures to ensure that:

a. Vehicles are fully equipped and maintained in a safe operating condition. In addition:

(1) All primary response vehicles (ground only) shall be housed in a garage or other facility that prevents engine, equipment and supply freeze-up and windshield icing. An unobstructed exit to the street shall also be maintained;

(2) The garage or other facility shall be adequately heated or each primary response vehicle shall have permanently installed auxiliary heating units to sufficiently heat the engine and patient compartment; and

(3) The garage or other facility shall be maintained in a clean, safe condition free of debris or other hazards.

b. The exterior and interior of the vehicles are kept clean. The interior and equipment shall be cleaned after each use as necessary. When a patient with a communicable disease has been transported or treated, the interior and any equipment or nondisposable supplies coming in contact with the patient shall be thoroughly disinfected.

c. All equipment stored in a patient compartment is secured so that, in the event of a sudden stop or movement of the vehicle, the patient and service program personnel are not injured by moving equipment.

d. All airway, electrical and mechanical equipment is kept clean and in proper operating condition.

e. Compartments provided within the vehicles and the medical and other supplies stored therein are kept in a clean and sanitary condition.

f. All linens, airway and oxygen equipment or any other supplies or equipment coming in direct patient contact is of a single-use disposable type or cleaned, laundered or disinfected prior to reuse.

g. Freshly laundered blankets and linen, or disposable linens are used on cots and pillows, and are changed after each use.

h. Proper storage is provided for clean linen.

i. A closed container is provided for soiled supplies.

132.8(6) Service program--incident and accident reports.

a. Incidents of fire or other destructive or damaging occurrences affecting the service program or theft of a service program vehicle, equipment, or drugs shall be reported to the department within seven days following the occurrence of the incident.

b. A copy of the motor vehicle accident report required under Iowa Code subsection 321.266(2), relating to the reporting of an accident resulting in personal injury, death or property damage, shall be submitted to the department within seven days following an accident involving a service program vehicle.

132.8(7) Mutual aid agreements.

a. The department may require a service program to have a written mutual aid agreement in place with at least one neighboring transport service for backup purposes in the event the service program's vehicle is not available in its primary service area. The agreements shall specify the duties and responsibilities of the agreeing parties, and a copy of the written agreement shall be submitted to the department.

b. FR-D services (operating in conjunction with nonadvanced care services) shall provide assurances that the ambulance service will have adequate equipment and trained staff to ensure continuity of care. This shall include, if necessary, ensuring that an FR-D is present with the patient while en route to a hospital.

132.8(8) Iowa ambulance standards.

a. The vehicle shall be capable of a sustained speed of not less than fifty-five mph over dry, hard surfaced, level roads and shall be capable of providing a stable ride during all weather conditions.

b. The vehicle shall be capable of being driven for at least one hundred fifty miles before refueling.

c. The electrical system shall be equipped to include, but shall not be limited to:

(1) Dual twelve-volt batteries with equal ampere rating;
(2) A one hundred thirty ampere alternator system;
(3) Starting, lighting, ignition, visual and audible warning systems and an ampere meter or volt meter;
(4) Owner specified electronics equipment;
(5) Devices that include master consoles located in the cab and patient compartments; and
(6) Other owner specified accessory wiring.

d. All wiring devices, switches, outlets, etc., (except circuit breakers) shall be rated to carry at least one hundred percent of the maximum ampere load for which the circuit is protected. All electrical wiring connectors and controls shall be easily identifiable and readily accessible for checking and servicing without having to move equipment or supplies from their usual location within the vehicle.

e. The electrical generating system shall be reliable at outside temperatures ranging from minus thirty degrees Fahrenheit to plus one hundred twenty degrees Fahrenheit to permit prompt starting of all systems onboard the vehicle while driving to the scene, while idling at the scene for variable periods of time, and while driving from the scene to the hospital with all systems at maximum capacity. The alternator shall be capable of producing a minimum of one hundred thirty amperes at fifty percent of the engine's rated net horsepower RPM rating. An alternator producing more than one hundred thirty amperes at fifty percent of the furnished engine's rated net horsepower RPM rating shall be used when the ampere load of all electrical equipment and accessories requires it. An auxiliary throttle shall be included to control the RPMs of an idling engine.

f. A dual twelve-volt battery system with a labeled "battery selector device" shall be furnished. The batteries shall not be rated less than three hundred seventy-five cold cranking amperes at zero degrees Fahrenheit with one hundred fifteen minutes reserve capacity.

g. The engine cooling system shall be a closed, air free liquid state type with an overflow recovery tank and a coolant compensating system. The cooling system shall maintain the engine at safe operating temperatures at all drivable altitudes and grades that may be encountered during vehicle use.

h. All normal vehicle controls, switches and instruments shall be clearly identified, within normal reach of the driver and visible by day or night.

i. The specified patient compartment controls, switches, and instruments shall be panel mounted and located within normal reach of a seated attendant facing the rear of the patient compartment forward of the primary patient's head. All patient compartment controls shall be clearly identified and visible by day or night.

j. There shall be emergency lights that provide three hundred sixty degrees of visibility and a siren capable of producing at least one hundred decibels at ten feet. A public address system shall be included.

k. There shall be an exterior light over the rear loading door which shall be activated automatically when the door is opened and by a manual switch inside the vehicle. There shall be at least one clear white flood light on each side of the vehicle.

l. There shall be two mounted spotlights or one hand-held spotlight.

m. The patient compartment size (including interior cabinet space) shall be a minimum of:

(1) Head room, sixty inches;
(2) Length, one hundred sixteen inches; and
(3) Width, sixty inches.

n. There shall be an in-line oxygen system that includes, as a minimum, an oxygen cylinder with a storage capacity of at least two thousand liters located in a compartment which is vented to the outside. The pressure gauge, regulator and control valve shall be readily accessible. In addition, there shall be at least one oxygen outlet accessible to the head of the patient stretcher.

o. An engine vacuum with a reservoir or electrically powered suction aspirator system with an air flow of at least thirty liters per minute and a vacuum of at least three hundred millimeters of mercury shall be securely mounted yet readily accessible. The unit shall be equipped with large bore, nonkinking suction tubing and semirigid, oropharyngeal suction tips (nonmetallic) and shall be located in the patient compartment.

p. All vehicles shall be equipped with a complete climate control system(s) to supply and maintain clean air conditions with a comfortable level of inside temperature in both driver and patient compartments. The various systems for heating, ventilation, and air conditioning may be a separate or a combination system which shall permit independent control of the environment within each compartment.

q. An inflated spare tire and wheel assembly, identical to those on the vehicle, together with the necessary tools for tire changing may be carried, and if carried, preferably located outside the patient compartment.

r. All external storage compartments shall be readily accessible and weatherproofed.

s. The type I modular unit, the type II van unit, and the type III integral cab-modular unit shall be of prime commercial quality metal or other material with strength at least equivalent to all-steel. Wood shall not be used for structural framing. The exterior of the body shall have a smooth finish, except for rub rails, and shall include provisions for doors and windows as specified. The ambulance body as a unit shall be designed and built to provide impact and penetration resistance, and shall be of sufficient strength to support the entire weight of the fully loaded vehicle on its top or side if overturned, without crushing, separation of joints, or permanently deforming roof bow or reinforcements, body posts, doors, strainers, stringers, floor, inner linings, outer panels and other reinforcements.

t. Crash-stable quick release devices (i.e., seat belts, fasteners, etc.) shall be available for the following:

(1) One driver and one passenger in the front seat(s);

(2) One attendant at the head of the primary patient stretcher;

(3) Two patients on stretchers, one patient on the primary stretcher and one on a backup stretcher (i.e., stair chair, hanging stretcher, etc.); and

(4) Additional equipment and supplies as appropriate for the level of service (medical care) provided.

u. There shall be adequate space to mount radios and allow easy access for maintenance. The radio system shall allow for radio communications to all appropriate entities from the driver's compartment as well as the patient compartment.

v. Safety equipment shall include, but need not be limited to, flares (or the equivalent) and a readily accessible five-pound ABC fire extinguisher.

132.8(9) Iowa rescue and first response vehicle standards.

a. The vehicle shall be capable of a sustained speed of not less than fifty-five mph over dry, hard surfaced, level roads and shall be capable of providing a stable ride during all weather conditions.

b. The electrical system shall be equipped to include, but shall not be limited to:

(1) A single twelve-volt battery (although dual twelve-volt batteries with equal ampere rating would be preferable); and

(2) Starting, lighting, ignition, visual and audible warning systems and an ampere meter or volt meter.

c. All wiring devices, switches, outlets, etc., (except circuit breakers) shall be rated to carry at least one hundred percent of the maximum ampere load for which the circuit is protected. All electrical wiring connectors and controls shall be easily identifiable and readily accessible for checking and servicing.

d. The electrical generating system shall be reliable at outside temperatures ranging from minus thirty degrees Fahrenheit to plus one hundred twenty degrees Fahrenheit to permit prompt starting of all systems onboard the vehicle.

e. The cooling system shall maintain the engine at safe operating temperatures at all drivable altitudes and grades that may be encountered during vehicle use.

f. All normal vehicle controls, switches and instruments shall be clearly identified, within normal reach of the driver and visible by day or night.

g. There shall be emergency lights that provide three hundred sixty degrees of visibility and a siren capable of producing at least one hundred decibels at ten feet. A public address system shall be included.

h. An inflated spare tire and wheel assembly, identical to those on the vehicle, together with the necessary tools for tire changing may be carried.

i. All external storage compartments shall be readily accessible and weatherproofed.

j. Crash-stable quick release devices (i.e., seat belts, fasteners, etc.) shall be available for the front seat occupants.

k. There shall be adequate space to mount radios and allow easy access for maintenance. The radio system shall allow for radio communications to all appropriate entities from the driver's compartment.

l. Safety equipment shall include, but need not be limited to, flares (or the equivalent) and a readily accessible five-pound ABC fire extinguisher.

132.8(10) Iowa essential equipment for primary response vehicles.

a. Portable suction apparatus with wide-bore tubing and rigid pharyngeal suction tip.

b. Hand-operated bag-valve-mask unit with adult, child, and infant size masks or separate units for each size (an oxygen demand valve may be used in lieu of the adult size unit).

c. Oropharyngeal airways in adult, child, and infant sizes.
d. Portable oxygen equipment with pressure and liter flow gauges.
e. Oxygen nasal cannulas.
f. Oxygen masks in adult, child, and infant sizes (including a partial or nonrebreather adult size mask).
g. Bite stick.
h. Pocket mask or equivalent.
i. Large and small sterile dressings.
j. Soft roller bandages.
k. Tape of various sizes.
l. Clean burn sheets (need not be sterile).
m. Occlusive dressing (occlusive gauze, plastic wrap, or defibrillator pads).
n. Lower extremity traction splint.
o. Extremity immobilizing device (board, ladder, or formable splint).
p. Short spine board (or equivalent extrication device) and long spine board.
q. Triangular bandages or slings.
r. Shears and scissors.
s. Sterile obstetrical kit.
t. Aluminum foil or silver swaddler (or equivalent) to maintain infant body temperature.
u. Stethoscope and blood pressure cuff (adult size required with pediatric size recommended).
v. Medical antishock trousers (adult size required with convertible or pediatric size recommended).
w. Penlight or equivalent and flashlight.
x. Rigid extrication collars (Philadelphia, stiff-neck or equivalent) in at least three basic sizes.

641—132.9 (147A) Service program—off-line medical direction.

132.9(1) The medical director shall be responsible for providing appropriate medical direction and overall supervision of the medical aspects of the service program and shall ensure that those duties and responsibilities are not relinquished before a new or temporary replacement is functioning in that capacity.

132.9(2) The medical director's duties include, but need not be limited to:

a. Developing, approving and updating protocols to be used by service program personnel.

b. Developing and maintaining liaisons between the service, other physicians, physician designees, and hospitals.

c. Monitoring and evaluating the activities of the service program and individual personnel performance.

d. Assessing the continuing education needs of the service and individual service program personnel and assisting them in obtaining the appropriate continuing education programs.

e. Being available for individual evaluation and consultation to service program personnel.

f. Performing or appointing a designee to complete the medical audits required in subrule 132.9(4).

g. Ensuring maintenance of skills by service program personnel including:

(1) Documenting training on specific equipment used by the service program. Such training may be performed by an approved training program or other qualified individual approved by the medical director.

(2) Documenting the monthly or quarterly defibrillation practice sessions required in subrule 132.8(1), paragraph "o."

(3) The medical director may remove an individual from service program participation and require remedial education including, but not limited to: classroom instruction, clinical experience and field experience.

h. Informing the medical community of the advanced emergency medical care being provided according to approved protocols in the service program area.

i. Helping to resolve service operational problems.

132.9(3) Supervising physicians and physician designees may assist the medical director by:

a. Providing medical direction.

b. Reviewing the advanced emergency medical care provided.

c. Reviewing and updating protocols.

d. Providing and assessing continuing education needs for service program personnel.

e. Helping to resolve operational problems.

132.9(4) The medical director, supervising physicians, physician designees or other qualified designees shall randomly audit (at least quarterly) documentation of calls where basic or advanced care was provided. The medical director shall review and sign each audit performed by the medical director, supervising physician, physician designee or other designee. As a minimum, all calls where advanced care was provided based upon protocol (without prior contact with medical direction) shall be audited. The audit shall be in writing and shall include, but need not be limited to:

a. Reviewing the patient care provided by service program personnel and remedying any deficiencies or potential deficiencies that may be identified regarding medical knowledge or skill performance.

b. Time spent at the scene.

132.9(5) The medical director shall approve written protocols for each drug carried by the service program which describes when and how each drug may be administered.

132.9(6) On-line medical direction when provided through a hospital.

a. The medical director shall designate in writing at least one hospital which has established a written on-line medical direction agreement with the department. It shall be the medical director's responsibility to notify the department in writing of changes regarding this designation.

b. Hospitals signing an on-line medical direction agreement shall:

(1) Ensure that the supervising physicians or physician designees trained and currently certified in ACLS and will be available to provide on-line medical direction via radio communications on a 24-hour-per-day basis.

(2) Identify the service programs for which on-line medical direction will be provided.

(3) Establish written protocols for use by supervising physicians and physician designees who provide on-line medical direction.

(4) Administer a quality assurance program to review orders given. The program shall include a mechanism for the hospital and service program medical directors to discuss and resolve any identified problems.

c. A hospital which has a written medical direction agreement with the department may provide medical direction for any or all service program authorization levels and may also agree to provide backup on-line medical direction for any other service program when that service program is unable to contact its primary source of on-line medical direction.

d. Only supervising physicians or physician designees shall provide on-line medical direction via radio communications. However, a physician, registered nurse or EMT (of equal or higher level) may relay orders to advanced emergency medical care personnel, without modification, from a supervising physician or physician designee.

e. On an annual basis, the hospital shall notify the department in writing of any changes in the supervising physicians and physicians providing on-line medical direction.

f. Supervising physicians and physician designees shall be trained in the proper use of radio protocols and equipment.

g. The department may verify a hospital's communications system to ensure compliance with the on-line medical direction agreement.

h. A supervising physician or physician designee who gives orders (directly or via communications equipment from some other point) to an advanced emergency medical care provider is not subject to criminal liability by reason of having issued the orders and is not liable for civil damages for acts or omissions relating to the issuance of the orders unless the acts or omissions constitute recklessness.

i. Nothing in these rules requires or obligates a hospital, supervising physician or physician designee to approve requests for orders received from advanced emergency medical care personnel.

NOTE: Hospitals in other states may participate provided the applicable requirements of this subrule are met.

641—132.10 (147A) Complaints, investigations, denial, probation, suspension or revocation of service program authorization or renewal—appeal.

132.10(1) All complaints regarding the operation of authorized advanced emergency medical care service programs, or those purporting to be or operating as the same, shall be reported to the department. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075.

132.10(2) Complaints and the investigative process will be treated as confidential in accordance with Iowa Code chapter 22.

132.10(3) Service program authorization may be denied, placed on probation, suspended or revoked by the department in accordance with Iowa Code subsection 147A.5(3) for any of the following reasons:

a. Failure or repeated failure of the applicant or alleged violator to meet the requirements or standards established pursuant to Iowa Code chapter 147A or the rules adopted pursuant to that chapter.

b. Obtaining or attempting to obtain or renew or retain service program authorization by fraudulent means, misrepresentation or by submitting false information.

c. Engaging in conduct detrimental to the well-being or safety of the patients receiving or who may be receiving emergency medical care.

132.10(4) The department shall notify the applicant of the granting or denial of authorization or renewal, or shall notify the alleged violator of action to place on probation or suspend or revoke authorization or renewal pursuant to Iowa Code sections 17A.12 and 17A.18. Notice of denial, probation, suspension or revocation shall be served by restricted certified mail, return receipt requested, or by personal service.

132.10(5) Any request for appeal concerning the denial, probation, suspension or revocation of service program authorization or renewal shall be submitted by the aggrieved party in writing to the department by certified mail, return receipt requested, within thirty days of the receipt of the department's notice. The address is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075. If such a request is made within the thirty-day time period, the notice shall be deemed to be suspended. Prior to or at the hearing, the department may rescind the notice upon satisfaction that the reason for the denial, probation, suspension or revocation has been or will be removed. After the hearing, or upon default of the applicant or alleged violator, the administrative law judge shall affirm, modify or set aside the denial, probation, suspension or revocation. If no request for appeal is received within the thirty-day time period, the department's notice of denial, probation, suspension or revocation shall become the department's final agency action.

132.10(6) Upon receipt of an appeal that meets contested case status, the appeal shall be forwarded within five (5) working days to the department of inspections and appeals pursuant to the rules adopted by that agency regarding the transmission of contested cases. The information upon which the adverse action is based and any additional information which may be provided by the aggrieved party shall also be provided to the department of inspections and appeals.

132.10(7) The hearing shall be conducted according to the procedural rules of the department of inspections and appeals found in 481--chapter 4, Iowa Administrative Code.

132.10(8) When the administrative law judge makes a proposed decision and order, it shall be served by restricted certified mail, return receipt requested, or delivered by personal service. That proposed decision and order then becomes the department's final agency action without further proceedings ten (10) days after it is received by the aggrieved party unless an appeal to the director is taken as provided in subrule 132.10(9).

132.10(9) Any appeal to the director for review of the proposed decision and order of the administrative law judge shall be filed in writing and mailed to the director by certified mail, return receipt requested, or delivered by personal service within ten (10) days after the receipt of the administrative law judge's proposed decision and order by the aggrieved party. A copy of the appeal shall also be mailed to the administrative law judge. Any request for an appeal shall state the reason for appeal.

132.10(10) Upon receipt of an appeal request, the administrative law judge shall prepare the record of the hearing for submission to the director. The record shall include the following:

a. All pleadings, motions, and rules.

b. All evidence received or considered and all other submissions by recording or transcript.

c. A statement of all matters officially noticed.

d. All questions and offers of proof, objections and rulings thereon.

e. All proposed findings and exceptions.

f. The proposed decision and order of the administrative law judge.

132.10(11) The decision and order of the director becomes the department's final agency action upon receipt by the aggrieved party and shall be delivered by restricted certified mail, return receipt requested, or by personal service.

132.10(12) It is not necessary to file an application for a rehearing to exhaust administrative remedies when appealing to the director or the district court as provided in Iowa Code section 17A.19. The aggrieved party to the final agency action of the department who has exhausted all administrative remedies may petition for judicial review of that action pursuant to Iowa Code chapter 17A.

132.10(13) Any petition for judicial review of a decision and order shall be filed in the district court within thirty (30) days after the decision and order becomes final. A copy of the notice of appeal shall be sent to the department by certified mail, return receipt requested, or by personal service. The address is: Emergency Medical Services Section, Iowa Department of Public Health, Lucas State Office Building, Des Moines, Iowa 50319--0075.

132.10(14) The party who appeals a final agency action to the district court shall pay the cost of the preparation of a transcript of the contested case hearing for the district court.

641–132.11 (147A) Denial, suspension, or revocation of advanced emergency medical care personnel certificates or renewal–appeal.

132.11(1) All complaints regarding advanced emergency medical care personnel, or those purporting to be the same, shall be reported to the board.

132.11(2) In investigating such complaints the certificate holder, supervising physician, and other individuals as appropriate may be requested, and if so requested, shall appear at a board meeting for the purpose of responding to such complaints.

132.11(3) The board may deny an application for issuance or renewal of an advanced EMT, or paramedic certificate, or suspend or revoke such a certificate when it finds that the applicant or certificate holder has:

a. Acted negligently in performing the authorized services.

b. Failed to follow the directions of the supervising physician.

c. Rendered treatment not authorized under Iowa Code chapter 147A.

d. Violated any of the provisions of or failed to comply with pertinent requirements of Iowa Code chapter 147A, or the rules implementing such chapter.

e. Furnished false, misleading or incomplete information to the board.

f. Pled guilty to or have been convicted of a serious misdemeanor or felony relating to advanced EMT or paramedic services.

132.11(4) The proposed denial, suspension, or revocation shall be considered by a committee of the board consisting of at least two members appointed by the chair of the board. The committee shall advise the executive director of its decision. The executive director shall then notify the applicant of the granting or denial of certification or renewal, or of action to suspend or revoke such certification or renewal. Notices of denial, suspension, or revocation shall be by certified mail, return receipt requested, or by personal service.

132.11(5) Any request for a hearing before the board concerning the denial, suspension, or revocation of certification or renewal shall be submitted by the aggrieved party in writing to the board by certified mail, return receipt requested, within thirty days of the mailing of a notice of intended action by the board. The address is: Iowa State Board of Medical Examiners, State Capitol Complex, Executive Hills West, Des Moines, Iowa, 50319.

132.11(6) The board shall prepare the notice of hearing and transmit same to the aggrieved party by certified mail, return receipt requested, at least ten days before the date of the hearing.

132.11(7) The board adopts the rules of the department found in 641--chapter 173, Iowa Administrative Code, as the procedure for hearings before the board. The board may authorize an administrative law judge to conduct hearings, administer oaths, issue subpoenas, and prepare written findings of fact, conclusions of law, and decisions at the direction of the board. The members of the committee which make the initial decision to deny, suspend, or revoke certification or renewal shall not take part in the hearing panel but may appear as witnesses.

132.11(8) The decision of the board shall be mailed to the aggrieved party by certified mail, return receipt requested, or by personal service.

132.11(9) Any appeal to the district court from denial, suspension, or revocation of such certification or renewal shall be taken within thirty days from the issuance of the decision of the board. Notice of appeal shall be sent to the board by certified mail, return receipt requested, or by personal service. It is not necessary to request a rehearing before the board to appeal to the district court.

132.11(10) The party who appeals a decision of the board to the district court shall pay the cost of the preparation of a transcript of the administrative hearing for the district court.

641–132.12 (147A) Denial, suspension, or revocation of training program authorization or renewal–appeal.

132.12(1) The board may deny an application for authorization or renewal of a training program, or suspend or revoke such authorization or renewal if the board finds reason to believe the training program will not or has not been operated in compliance with Iowa Code chapter 147A, or the rules implementing such chapter, or that there is insufficient assurance of adequate protection for the public.

132.12(2) The proposed denial, suspension, or revocation shall be considered by a committee of the board consisting of at least two members appointed by the chair of the board. The committee shall advise the executive director of its decision. The executive director shall then notify the applicant of the granting or denial of authorization or renewal, or of action to suspend or revoke such authorization or renewal. Notices of denial, suspension, or revocation shall be by certified mail, return receipt requested, or by personal service.

132.12(3) Any request for a hearing before the board concerning the denial, suspension, or revocation of training program authorization or renewal shall be submitted by the aggrieved party in writing to the board by certified mail, return receipt requested, within thirty days of the mailing of a notice of intended action by the board. The address is: Iowa State Board of Medical Examiners, State Capitol Complex, Executive Hills West, Des Moines, Iowa, 50319.

132.12(4) The executive director shall prepare the notice of hearing and transmit same to the aggrieved party by certified mail, return receipt requested, at least ten days before the date of the hearing.

132.12(5) The board adopts the rules of the department found in 641--chapter 173, Iowa Administrative Code, as the procedure for hearings before the board. The board may authorize an administrative law judge to conduct hearings, administer oaths, issue subpoenas, and prepare written findings of fact, conclusions of law, and decisions at the direction of the board. The members of the committee which make the initial decision to deny, suspend, or revoke authorization or renewal shall not take part in the hearing panel but may appear as witnesses.

132.12(6) The decision of the board shall be mailed to the aggrieved party by certified mail, return receipt requested, or by personal service.

132.12(7) Any appeal to the district court from denial, suspension, or revocation of such training program authorization or renewal shall be taken within thirty days from the issuance of the decision of the board. Notice of appeal shall be sent to the board by certified mail, return receipt requested, or by personal service. It is not necessary to request a rehearing before the board to appeal to the district court.

132.12(8) The party who appeals a decision of the board to the district court shall pay the cost of the preparation of a transcript of the administrative hearing for the district court.

641–132.13 (147A) Rescinded, effective July 23, 1986.

641–132.14 (147A) Temporary variances.

132.14(1) If during a period of authorization there is some occurrence that temporarily causes a service program to be in noncompliance with these rules, the department may grant a temporary variance. Temporary variances to these rules (not to exceed six months in length per any approved request) may be granted by the department to a currently authorized service program. Requests for temporary variances shall apply only to the service program requesting the variance and shall apply only to those requirements and standards for which the department is responsible.

132.14(2) To request a variance, the service program shall:

a. Notify the department verbally (as soon as possible) of the need to request a temporary variance.

b. Cite the rule from which the variance is requested.

c. State why compliance with the rule cannot be maintained.

d. Explain the alternative arrangements that have been or will be made regarding the variance request.

e. Estimate the period of time for which the variance will be needed.

f. Submit to the department, within ten days after having given verbal notification to the department, a written explanation for the temporary variance request that addresses each of the above paragraphs. The address and telephone number is: Iowa Department of Public Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319--0075, (515) 281-3741.

132.14(3) Upon notification of a request for variance, the department shall take into consideration, but shall not be limited to:

a. Examining the rule from which the temporary variance is requested to determine if the request is appropriate and reasonable.

b. Evaluating the alternative arrangements that have been or will be made regarding the variance request.

c. Examining the effect of the requested variance upon the level of care provided to the general populace served.

d. Requesting additional information if necessary.

132.14(4) Preliminary approval or denial shall be provided verbally within twenty-four hours. Final approval or denial shall be issued in writing within ten days after having received the written explanation for the temporary variance request and shall include the reason for approval or denial. If approval is granted, the effective date and the duration of the temporary variance shall be clearly stated.

132.14(5) Rescinded, effective July 10, 1987.

132.14(6) Any request for appeal concerning the denial of a request for temporary variance shall be in accordance with the procedures outlined in rule 132.10 (147A).

132.14(7) EMT-I service programs authorized prior to January 1, 1990, may request a variance to subrule 132.8(2), paragraph "b," and the defibrillator requirement in subrule 132.8(4), paragraph "i." The variance shall expire on January 1, 1992. An individual certified as an EMT-I but who has not completed defibrillation training shall complete automated defibrillation training prior to January 1, 1992.

REGISTERED NURSES

(Iowa Administrative Code 655—Chapter 6 excerpts).

655—6.4(152)

6.4(2) A registered nurse may be a member of the staff of an ambulance or rescue squad authorized pursuant to Iowa Code chapter 147A.

a. The registered nurse shall document skills training and education equivalent or superior to that required of a certified advanced emergency medical technician or paramedic.

b. Documentation of the following education and skills training shall be reviewed and approved at the local level by the medical director of the ambulance or rescue squad.

(1) For all levels of certification the following shall be required:

Current basic cardiac life support (BCLS) certification in accordance with current American Heart Association standards.

Military antishock trouser (MAST).

Use of basic airway adjuncts including:

1. Oropharyngeal airway.
2. Nasopharyngeal airway.
3. Cannula, mask.
4. Demand valve unit.
5. Bag valve mask.
6. Pocket mask.
7. Initiation and use of portable O_2 tanks.

Application of traction and cervical immobilization.

Complete spinal and extremity immobilization.

Use of extrication equipment.

Immobilization of impaled object.

Voice radio communication.

Four advanced life support field responses.

Emergency driving.

Primary and secondary field assessment.

Overview of statutes and rules governing emergency medical services.

(2) For EMT-I, EMT-II and Paramedic, esophageal intubation shall be required.

(3) For EMT-D, EMT-II and Paramedic, recognition and treatment of ventricular fibrillation and operation of defibrillator shall be required.

(4) For EMT-II and Paramedic, the following shall be required:

Direct laryngoscopy.

Endotracheal intubation.

Current advanced cardiac life support (ACLS) in accordance with current American Heart Association standards.

c. The documentation may be reviewed by the board of medical examiners, the board of nursing, or state health department.

d. Exceptions to this subrule include:

(1) The registered nurse who accompanies and is responsible for a transfer patient.

(2) The registered nurse who serves on a basic ambulance or rescue squad service.

e. Any registered nurse found to be staffing an authorized ambulance or rescue squad service who has not met the appropriate educational standards shall be subject to disciplinary proceedings initiated by the board of nursing as defined in the Iowa Administrative Code 655-chapter 4.

PHARMACY

(*Iowa Administrative Code 657--Chapter 11 excerpts*)

657–11.1(155) Definitions. For the purpose of these rules, the following terms shall have the meaning in this rule:

11.1(1) *"Emergency medical care vehicles* (EMV) means ambulance or rescue squad service program vehicles such as the fire department rescue vehicles or private, municipal or hospital-owned ambulances.

11.1(2) *"Board"* means the Iowa board of pharmacy examiners.

11.1(3) *"Emergency medical care vehicle kit"* (EMV-Kit) shall means a box in which all drugs stocked in the EMV are located.

11.1(4) *"Advanced emergency medical technician"* means an individual who has been issued an advanced EMT certificate by the Iowa board of medical examiners.

11.1(5) *"Paramedic"* means an individual who has been issued a paramedic certificate by the Iowa board of medical examiners.

11.1(6) *Emergency department"* (ED) shall mean that department of the hospital which works directly with the EMV service program units. It also means that department of a hospital to which the EMV may transport the patient and under whose authority treatment is provided by the advanced EMT or paramedic.

11.1(7) *"Executive secretary"* means the executive secretary of the Iowa board of pharmacy examiners.

11.1(8) *"Drug list"* shall mean that standardized list of drugs approved by the Iowa advanced emergency medical care council for inclusion in the emergency medical care vehicle kit.

657–11.2(155) Guidelines.

11.2(1) Any and all drugs shall be provided by a hospital pharmacy or community pharmacy to an EMV; shall be the ultimate responsibility of that pharmacy; and shall remain the property of that pharmacy.

11.2(2) Formal written agreements shall be made between the base pharmacy and the EMV establishing that the EMV's are operating as an extension of the base pharmacy with respect to the EMV kits.

11.2(3) Narcotics and other controlled substances shall be prescribed only by a physician who is properly registered with the Federal Drug Enforcement Administration (DEA) and the board under the Iowa uniform controlled substances Act.

11.2(4) Pharmacies other than the base pharmacy may replace the complete kit or those EMV kit drugs which have been administered to patients upon receipt of an order signed by the attending ED physician who is so authorized.

11.2(5) Pharmacies shall provide EMV kits with drugs limited to the drugs listed in the approved drug list for that advanced emergency medical care service program.

11.2(6) Changes in the approved drug list shall only be made with the approval of the Iowa advanced emergency medical care council. Any proposals to change items or quantities on the approved drug list shall be submitted to the Iowa advanced emergency medical care council on the appropriate form as per their guidelines. No changes shall be made without the express approval of that body.

11.2(7) Each EMV kit shall have attached an inspection check list and a list of the quantity and location of the drugs in the kit.

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11.2(8) All inspections of EMV kits prior to release to an advanced emergency medical care service program shall be done by an Iowa licensed pharmacist. Proof of each inspection shall be noted on each inspection check list stating date, pharmacy, and pharmacist's name.

11.2(9) An EMV shall not have more than one EMV kit at a time.

11.2(10) An EMV kit shall be secured within the EMV at all times when not in use.

11.2(11) Following administration of a drug from an EMV kit, the advanced emergency medical technician or paramedic shall record on appropriate forms sufficient information to satisfy formal written agreements as stated in subrule 11.2(2).

11.2(12) EMV kits and record concerning same, whenever in an EMV, an ED, or other place shall be subject to inspection by the board and the U.S. Drug Enforcement Administration.

EMERGENCY VEHICLES

(Iowa Administrative Code 761–Chapter 451 excerpts)

761–451.1(321) Blue light certificate for firefighters.

451.1(1) *Application.* Application for a blue light certificate shall be submitted on Form 411022 to: Office of Vehicle Registration, Iowa Department of Transportation, Lucas State Office Building, Des Moines, Iowa 50319. The application shall include the name and occupation of the owner of the vehicle, vehicle identification information, and a description of how the vehicle will be used when the blue light is flashing.

451.1(2) Reserved.

This rule is intended to implement Iowa Code section 321.423.

761–451.2(321) Authorized emergency vehicle certificate.

451.2(1) *Definitions.*

"Ambulance" is defined in Iowa Code section 321.1.

"Disaster vehicle" or *rescue vehicle"* is a vehicle used to extricate or assist persons in dangerous situations involving their bodily welfare.

"Privately owned vehicle" is a vehicle that is not owned by a federal, state, county or city government.

451.2(2) *Application.* Application for a certificate which designates a privately owned ambulance or a fire, rescue or disaster vehicle as an authorized emergency vehicle shall be submitted on Form 411022 to: Office of Vehicle Registration, Iowa Department of Transportation, Lucas State Office Building, Des Moines, Iowa 50319. The application shall include the name and occupation of the owner of the vehicle, vehicle identification information, a description of how the vehicle is equipped, a description of how the vehicle will be used when the red light is flashing, and a picture showing a side view of the vehicle. A certificate of designation may be given for a vehicle owned by the following:

a. A sheriff or an authorized, full-time, paid deputy of a sheriff if the person's vehicle is used as a rescue or disaster vehicle.

b. A chief of police or the chief of a full-time, paid fire department if the authorized emergency vehicle designation is requested by the city council, the application is certified to this effect by the mayor, and the department determines that the public welfare calls for the designation.

c. A person owning a vehicle equipped and used as an ambulance.

d. A person owning a vehicle that otherwise meets the requirements of this rule or Iowa Code section 321.451.

This rule is intended to implement Iowa Code section 321.451.